



INSTITUTE FOR DEFENSE ANALYSES

**After Action Report:
Black Sea Initiative
Table Top Exercise Albatross 2007
Batumi, Georgia
12–15 February 2007**

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PREFACE

This document was prepared by the Institute for Defense Analyses (IDA) for the Headquarters Department of the Army, Office of the Deputy Chief of Staff G-3/5/7; Directorate of Strategy, Plans, and Policy, Stability Operations Division (DAMO-SSO), Chief, Civil-Military Emergency Preparedness (CMEP), in partial fulfillment of the task “Civil-Military Emergency Preparedness Workshop Support.” The objective of this effort was to provide an After Action Report on the CMEP Black Sea Initiative (BSI) Table Top Exercise (TTX) Albatross 2007, held in Batumi, Georgia, 12-15 February 2007, and to assist the planning of future TTXs in the CMEP BSI series under the same task.

The exercise, which featured a civilian-focused chemical consequence management scenario, was the culmination of a year’s worth of work developing and preparing for the exercise with the assistance of the Georgian host and the participation of six Black Sea littoral nations (Romania, Bulgaria, Georgia, Moldova, Turkey, Ukraine) who were the co-developers and main audience.

This document was written by the IDA CMEP task leader who was the lead After Action Officer for the exercise, and includes data compiled from contributions by the Albatross exercise After Action Officers from IDA, USACE, and each of the participating nations. The effort was sponsored and funded by the Office of the Under Secretary of Defense for Policy, Assistant Secretary of Defense (Global Security Affairs, Partnership Strategies), and Chief, CMEP. Event execution was led by the U.S. Army Corps of Engineers.

IDA provided support for the planning, development, facilitation, and execution of the exercise. The document was reviewed by the IDA personnel who served as AAR facilitators during the event and contributed to the preparation of the report; the key facilitators; designated representatives from the sponsoring organizations; and Mr. Robert R. Soule, Director of the Operational Evaluation Division.

**AFTER ACTION REPORT:
BLACK SEA INITIATIVE TABLE TOP EXERCISE
ALBATROSS 2007
BATUMI, GEORGIA
12–15 FEBRUARY 2007**

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EXECUTIVE SUMMARY

A. INTRODUCTION AND BACKGROUND

The Black Sea Initiative (BSI) Table Top Exercise (TTX) Albatross 2007 featured a chemical consequence management scenario that included three major events: oil terminal explosion, fire, and spill; train car rocket fuel explosion and toxic cloud; and terrorist release of the chemical weapons agent Sarin. The exercise was hosted by Georgia and financially sponsored by the U.S. Department of Defense and the United States Army. It was the second TTX held under the auspices of the Black Sea Initiative, an activity agreed to by the Black Sea littoral nations (Bulgaria, Georgia, Moldova, Romania, Russia, Turkey, and Ukraine) during an exploratory conference held in Varna, Bulgaria, in October 2004.¹ The Albatross TTX drew on lessons from the first BSI TTX, TOMIS International 2005, which was hosted by Romania in September 2005 and featured a smallpox bioterrorism scenario.

This After Action Report (AAR) draws conclusions and recommendations based on observations of national, regional, and international coordination in the area of civil-military emergency preparedness in response to the Albatross 2007 TTX scenario. The report evaluates the exercise in terms of the overarching objectives of the CMEP Black Sea Initiative, as measured by observations of the Exercise Control Group's (ECG) After Action Team.

The goal of the BSI is to foster cooperation among the Black Sea littoral nations to increase regional emergency preparedness through a series of Table Top Exercises. The exercises focus on consequence management for the full range of natural and man-made disasters, including those caused by weapons of mass destruction (WMD), such as Chemical, Biological, Radiological, Nuclear, and High Yield Explosives (CBRNE), affecting Black Sea commercial ports and nearby populations.

¹ Russia was invited to the Varna conference and expressed interest in the BSI concept, but did not send delegates to that meeting. Russia participated in the Main Planning Conference (MPC) and the final Table Top Exercise for TOMIS 05, hosted by Romania, but did not participate in events supporting Albatross 2007.

The purpose of BSI TTX Albatross 2007 was to promote inter-ministerial, regional, and international cooperation in mitigation and emergency planning in the Black Sea littoral nations through the following four overarching BSI Objectives:

1. Support and promote existing international, regional, and national structures and standards for response to threats to populations, including natural disasters and terrorist incidents.
2. Apply the internationally agreed policies and standards adopted by United Nations–Office of Coordination for Humanitarian Assistance (UN–OCHA) and the NATO Euro-Atlantic Disaster Response Coordination Center (EADRCC) processes (in Euro-Atlantic Partnership Council (EAPC) format), and other international bodies as appropriate.
3. Assist nations in developing emergency management Geographic Information Systems (GIS) experience as well as spatial databases and Internet tools to assist in emergency planning and response.
4. Promote regional data contributions to and use of the CMEP Black Sea Viewer and related geospatial tools.

B. ALBATROSS TTX

The Albatross 2007 TTX featured a chemical consequence management scenario chosen by the host nation. The exercise was developed through a series of planning conferences held during 2006 and 2007 featuring subject matter experts and the participation of delegations from the six littoral states broken out into three working groups (Standards and Procedures (SPWG), Planning and Exercises (PEWG), Media and Public Information (MPIWG)) facilitated by host and U.S. sponsor facilitators. The events also included work by a BSI Steering Group consisting of senior representation from each littoral nation, co-chaired by the host and U.S. DoD sponsors. Five littoral nations (including the host) actively participated in the Albatross TTX: Bulgaria, Georgia, Moldova, Romania, and Ukraine. While in attendance, BSI member Turkey participated in the Steering Group, but largely only observed the exercise play.

The scenario was closely held by its trusted agent developers in the PEWG such that players in the TTX were not privy to the scenario specifics prior to the event. PEWG members from the civil protection community developed the chemical Master Scenario Events List (MSEL) with input from experts from the UN Office of the Coordinator for Humanitarian Assistance (UN-OCHA), the Technical Secretariat of the Organization for the Prohibition of Chemical Weapons (OPCW), and chemical response experts from the littoral nations. The TTX play was designed to be presented in three modules (each

followed by an informal hot wash),² each with a set of objectives to focus players on certain areas of a bioterrorism response. The three module objectives were as follows:

Module 1: Steps by nations to mitigate effects of oil terminal explosion, fire, and spill as well as train car rocket fuel explosion and release of toxic cloud (initiate measures to protect population, request assistance as needed, inform public).

Objectives:

1. Initiate measures to protect population and mitigate effects of oil terminal explosion, fire, and spill as well as train car rocket fuel explosion and release of toxic cloud.
2. Initiate processes to request imagery in support of oil spill and train car rocket fuel explosion mitigation.
3. Initiate measures to protect population, request regional/international assistance as needed, and inform public, to include: Notifications, Requests for Assistance, and Situation Reports by national civil protection/emergency management authorities.
 - a. **National Level:** Exchange information and situation reports for both incidents; determine chemical released, treat those immediately affected and refer to plume models to determine direction of cloud; act accordingly to mitigate effects of plume and oil spill spread upon people and ports.
 - b. **Regional/International Level:** Notifications among affected nations for both incidents based on bilateral, regional, and international agreements/arrangements; act accordingly to initiate requests and offers of assistance to mitigate impact of oil spill and toxic plume spread.

Module 2: Steps to mitigate effects of possible chemical WMD exposure as well as oil spill and train car rocket fuel explosion.

Objectives:

1. Employ national and international capabilities (medical and non-medical) and consequence management procedures to mitigate the possible chemical WMD exposure.

² A hot wash occurs immediately following an exercise (in this case after each exercise module) and allows players/controllers/after action officers the opportunity to provide immediate feedback. It enables controllers and evaluators to capture events while they remain fresh in players' minds and to ascertain players' level of satisfaction with the exercise and to determine any issues or concerns and proposed improved items. (U.S. Office of Domestic Preparation Handout—"Security Exercise and Evaluation Program," U.S. DHS, May 2004.)

2. Continue to mitigate effects of the oil spill as well as the train car rocket fuel explosion emergency.
3. Initiate Public Information programs on all events for region and for international audience to include neighbouring nations, as well as home countries of the foreign tourists in affected areas. Assuage concerns about terrorist actions.

Module 3: Employ national and international capabilities (medical and non-medical) and consequence management capabilities to contain and begin recovery from the emergency.

Objectives:

1. Initiate coordination of all incoming international support to contain the incidents.
2. Initiate appropriate recovery measures for areas where incidents have been contained.
3. Ensure Public Information programs continue to advise populations on the impact and status of all three major incidents.

Each nation was invited to bring PEWG or SPWG members to act as controllers and after action officers during the exercise. The host nation participated in the Exercise Control Group and was assisted by controllers and AAR counterparts from the pool of supporting U.S. exercise facilitators and subject matter experts. It must be noted that due to staff shortages, the host was not able to maintain participation in the Exercise Control Group during the TTX. The Institute for Defense Analyses, which had participated in exercise development and execution support, was tasked to compile and write the final exercise After Action Report, which appears in the form of this document.

The observations and lessons identified by this report should assist participating nations in evaluating their own national response plans, not only in terms of a chemical mitigation scenario, but also in their capacities to respond to the full spectrum of disasters. Where gaps have been identified in national, regional, or international coordination and assistance procedures, the lessons should lead to mitigation actions through both national or international initiatives. Additionally, these recommendations should help to guide the planning and execution of future table top exercises in substance and process.

The participants, the host, the organizers, and the facilitators evaluated the exercise as successful, because it brought together the littoral nations to respond to a difficult scenario involving factors and organizations that national civil protection agencies were not accustomed to addressing at national, regional, or international levels.

The selection of the chemical scenario with three major events required expertise from national, regional, and international agencies and presented participants with challenges that required cross-sectoral solutions. These actions in turn enabled national participants to review the effectiveness of their existing national response plans and exposed gaps in national response plans and in international coordination procedures across these sectors. Nations adapted to these challenges during the exercise using creative solutions, but the lack of consistency in those responses showed the need for more familiarity with existing standardized guidelines and procedures, as well as the need for new protocols to enable more effective and efficient coordination for a multinational response effort.

C. EVALUATION OF BSI OBJECTIVES

1. Support and promote existing international, regional, and national structures and standards for response to threats to populations (including natural disasters and terrorist incidents).

The Albatross TTX was designed with the intent to support and promote national, regional, and international structures and standards for response, and it largely met this goal. The exercise planning process explicitly promoted this objective and the intent was reinforced by the exercise guidelines as well as the participant orientation program. During the TTX, nations utilized existing national structures, protocols, and capacities as a basis for their responses, although it was observed that these structures and capacities were not always adequate to the needs specific to respond to oil, hazardous materials (HAZMAT), and chemical WMD events in the scenario.

In terms of regional standards:

- Nations did utilize EADRCC procedures and message formats (although not always consistently or with 100 percent accuracy).
- Civil Military Emergency Planning Council South Eastern Europe (CMEP-C SEE)³ was not formally represented during TTX nor was its role in response

³ CMEP Council of South Eastern Europe (CMEP-C SEE) is an independent body created by countries in the region with the goal of facilitating cooperation in emergency planning among the member nations. Participants now include: Albania, Bulgaria, Croatia, Greece, Macedonia, Romania, Slovenia, and Turkey. Greece and Italy have participated in many activities of the Council, which is led, in succession, by Heads of Civil Protection of the member nations. Bosnia-Herzegovina has been invited to join the Council. The Council's Working Groups have drafted a handbook incorporating policies and procedures from the EADRCC and UN-OCHA's Military-Civil Defense Assets (MCDA) database. Four CMEP-C SEE members states were present at the Albatross BSI TTX: three were BSI participants (Romania, Bulgaria, and Turkey) while one (Croatia) was officially an observer.

coordination referenced by member state counterparts during the exercise per its standard protocol.

- The European Union was not invited to participate in the exercise, but one national participant did indicate that they would coordinate with the EU Monitoring and Information Center (EU-MIC) to provide assets for the oil spill response (according to the relevant civil protection and maritime pollution response protocols).

TTX play highlighted the fact that, other than bilateral agreements, there are no Black Sea regional protocols which could be accessed for response to chemical WMD attacks or deliberate release of toxic industrial chemicals. There is a regional arrangement for responding to oil spills to which all littoral nations are a party, the Black Sea Regional Contingency Plan (BSRCP); however, participants did not make specific references to it. This may have been due to a lack of familiarity, by participating civil protection experts, with their national maritime response elements, or with all agreements to which they are a party. The BSRCP could potentially be employed as a model by a Black Sea regional organization for developing a more “all-hazards” approach to the full range of disasters that could occur in the region.

In terms of international structures and standards, the primary applicable organizations and standards for this scenario included the OPCW and UN-OCHA. For the most part, nations who directed their communications to EADRCC did so with knowledge that their notifications and requests would be shared and passed along to UN-OCHA as appropriate. Many players sent their communications to both EADRCC and UN OCHA, both of which facilitated disaster assistance coordination as would be the case in a real-world situation. OPCW received most of their direct communications toward the end of the second module and in the third module. The final event (Sarin release) was the only one which would have necessitated contact of the OPCW Technical Secretariat under current protocols, so this play was consistent with real-world interactions. The International Federation of the Red Cross and Red Crescent (IFRC) was also noted by one participant as an international organization they would work through to provide assets for the oil spill response.

2. Apply the internationally agreed policies and standards adopted by UN-OCHA, NATO’s EADRCC (in EAPC format), and other international bodies, as appropriate.

EADRCC standard messaging procedures were referenced and applied by players, although not always in a correct or consistent manner. Lack of clear markings on the

subject line of messages as well as lack of distinguishing language in message content, made it difficult to track the multiple messages for the response to three ongoing major events. Often confusing references (to time factors, in particular) caused difficulty in coordination of assistance offers and acceptances.

3. Assist EAPC nations in developing emergency management GIS experience as well as spatial databases and Internet tools to assist in emergency planning and response.

Nations used GIS tools to support decision-making and assistance requests during the TTX, reflecting effective application of the provided training. National development of GIS experience and capacities showed promise, but still requires emphasis across the board particularly in the role GIS can play and how BSI nations can support each other regionally through data-sharing. The participating nations displayed uneven levels of GIS experience, indicating the need for more standardized training with measures of progress. GIS facilitators plan to develop a draft GIS familiarization/certification program to meet this need.

4. Promote regional data contributions to and use of the CMEP Black Sea Viewer and related geospatial tools.

Participating nations kept their national data in their own national databases during the exercise. Although they felt comfortable sharing completed products, they were more hesitant about sharing raw data regionally even when prompted to do so by scenario injects. A lack of comfort existed in holding the data in a regional database. Thus, limited data were added to the Black Sea Viewer based upon regional contributions.

D. RECOMMENDATIONS

The following recommendations are broken out by category relative to BSI Objectives, Albatross TTX Module Objectives, Functional and National Perspectives, and Evaluation of Albatross Mechanics of Exercise Development and Execution. From these recommendations we can draw some conclusions for the way ahead based on lessons identified for both real-world applications and for future TTX planning and play.

1. Findings and Recommendations to Reinforce BSI Objectives

Finding (F) 1-A. Support Existing National Standards, Exercise the Role of the National Red Cross: While national standards were used during the TTX by each of the participating nations, it was noted that the role of national Red Cross branches was sparingly referenced during the exercise. The capacities of the Red Cross are a tremendous resource for supporting national level response, with reachback to the regional and international level. The IFRC attendee to Albatross indicated a desire to participate in the exercise development process for a future BSI TTX iteration.

Recommendation (R) 1-A. Future TTX should include local Red Cross as well as IFRC representatives as observers and/or participants. Future TTX planning should include briefings on the role of the Red Cross in disaster response at the local, regional, and international levels and future scenarios should build in injects to stimulate interaction with the Red Cross.

F1-B. Support Existing National and Regional Protocols, Exercise the Role of Maritime Aspects: The nations of the Black Sea each have national maritime elements in their governments which can play a role in disaster response at sea, relying on their own assets or accessing those of neighbors via existing mutual assistance agreements. Although these elements could have supported oil spill response, this aspect was not incorporated into Albatross and civil protection experts appeared to have little familiarity with those maritime elements.

R1-B. A future TTX could, depending on the scenario, include national maritime elements, including briefings on their roles and capacities during exercise planning sessions, incorporating these aspects into the scenario as applicable, with inclusion of maritime participants during the TTX as players or observers as appropriate.

F1-C. Support Existing International and Regional Standards: An major focus was on supporting existing standards through the exercise design, to include the participation of key international bodies, UN-OCHA, EADRCC, and OPCW, in the exercise. This inclusion responds to the recommendation from the TOMIS BSI TTX AAR and represents an improvement which injected to the exercise a much more realistic interplay between NEOCs and international organizations.

R1-C. Future BSI TTX events should include the appropriate international bodies as participants whenever possible.

F1-D. Improved Regional Coordination: In the Black Sea region, there is a lack of adequate regional structures and standards to address disaster response needs, including those required for consequence management in response to an intentional chemical WMD release by terrorists. The BSI TTX series could act as a testbed for proposed regional coordinating mechanisms.

R1-D.1. Nations in the Black Sea region should consider developing and refining regional capacities and protocols to enable quicker and more coordinated regional responses for the full spectrum of natural and man-made hazards. They could begin by offering up national equipment and units to the UN-OCHA Military-Civilian Defense Assets (MCDA) database.

R1-D.2. The BSI TTX series should adapt accordingly to include all appropriate regional coordination structures and protocols, whether real or proposed.

F2. Emphasize and support use of recognized policies and standards of UN-OCHA, EADRCC, and other relevant international bodies: Although most nations indicated they would utilize standard EADRCC protocols to request international assistance, not all nations consistently used and supported the recognized policies and standards of EADRCC and other relevant international bodies during the TTX.

R2. Future exercise orientation and preparatory materials should continue to emphasize participant use and adherence to internationally agreed policies and standards of UN-OCHA, EADRCC, and other relevant international bodies (such as OPCW in this scenario). The development of a web-based automated disaster request management system on the EADRCC website with pull down menus and automated numbering could potentially address some of these issues.

F3. Assist EAPC nations in developing emergency management GIS experience as well as spatial databases and Internet tools to assist in emergency planning and response: Although nations utilized GIS for emergency management coordination and decision-making during the TTX, application was uneven across the board given varied experience levels of participants. This area showed progress over the previous TTX, but the lack of a systematic approach towards developing individual and national civil and military GIS capabilities hampers progress. The civilian and military communities can benefit from a greater understanding and working knowledge of GIS tools: those in the technical community who are the current and/or future developers and users of GIS tools, and the operational responders and decision-makers who need to be familiar with the utility of the products generated by GIS for coordination, situational

awareness, and decision-making in disaster response. The use of GIS is directly relevant to the goal of enhancing civil-military cooperation and interoperability.

R3-A. BSI organizers and hosts should continue to integrate GIS tool usage into the planning, orientation, and execution of Table Top Exercises. The sponsors and hosts should continue to brief participants on the various applications of GIS tools, giving the host nation and other experienced GIS experts from the region the opportunity to share their experiences in using the tool, as well as the opportunity to demonstrate its utility for their littoral neighbors.

R3-B. Focus GIS familiarization and skill development on the technical community (current and future developers/users of GIS) as well as the civilian and military decision-makers and operational responders who need to be familiar with the utility of the products generated by GIS for coordination, situational awareness, and decision-making in disaster response.

R3-C. Explore adoption of a BSI/CMEP GIS familiarization/certification program.

R3-D. Explore adoption of a regional GIS Team concept for the next BSI TTX.

F4. Promoting regional data contributions to and the use of the CMEP Black Sea Viewer and related geospatial tools: Regional data contributions to the CMEP Black Sea Viewer, much less any related geospatial tools, did not occur during this exercise because of continued national sensitivities to sharing data. Nations were more comfortable sharing completed products. To tackle regional problems in the most efficient and effective manner, regional GIS information-sharing is paramount.

R4. In tandem with the recommendations for objective number three (R3), the BSI TTX series should continue to provide opportunities for GIS experts from the littoral region to work together to provide useful national inputs into GIS supporting databases with the goal of more comprehensive GIS tools such as the Black Sea Viewer. Illustrating the utility of pooled regional data for improved efficiencies in disaster response to policy level decision-makers might help to increase the level of trust and willingness to share more information with regional neighbors. The Regional GIS Team concept might also facilitate more regional information sharing.

2. Specific Recommendations Drawn from TTX Module Play

The Albatross TTX exercise scenario was broken down into three modules, each of which was designed to achieve a certain set of objectives specific to an oil, toxic industrial chemical (TIC), and chemical weapons agent event to support the overarching BSI objectives. The following specific recommendations were drawn from TTX Module Play. These recommendations pertain predominantly to improving real-world response, but also include some related to exercise design. The majority of exercise design related recommendations appear under the Administrative Recommendations section found later in this summary. Each module recommendation below is coded as such: ED = Exercise Design, RW = Real-World application.

Module 1

1. Future TTX MSELs should take into account language concerns as a time factor for comprehension and response turnaround, when producing scenario injects and determining the frequency of inject release. (ED)
2. All National Emergency Operations Centers (NEOC) need to ensure their full team is available for duty at the STARTEX, particularly the host nation (which in the BSI TTX series will be the Affected Nation), because other NEOC play often depends upon host nation initial actions and notifications to the international community. (ED)
3. Black Sea littoral nations should utilize their TTX information sharing experience in real-world application, particularly regional and international coordination to share satellite imagery to produce common GIS products to support disaster mitigation. (RW)
4. Future BSI TTX should consider a role for other national players in the NEOCs, such as representatives from the National Red Cross or Foreign Affairs Ministry, to enable playing out of that coordination element in disaster response. (ED)
5. The civil protection agencies of the littoral Black Sea nations should familiarize themselves with their national maritime counterparts as well as the existing regional and international agreements they are party to, such as those for mutual assistance for the spill of oil substances at sea. (RW)
6. When developing future BSI TTX scenarios on the littoral Black Sea, maritime elements from these nations should be included in the planning conferences (to brief

the participants as well as provide feedback and input to scenario development), and be invited to observe future TTX. (ED)

7. NATO-EADRCC standard message formats should be utilized as much as possible to enable clear and consistent communication during emergencies, particularly in coordination with assistance offered or received from EAPC countries. Black Sea littoral states should ensure their Civil Protection NEOC personnel (including the ones who participate in exercises) have familiarity with these formats and utilize them during TTX when appropriate, taking care to clearly fill out the forms and provide the appropriate amount of detail. (ED, RW)

Module 2

8. Affected Nations should provide frequent and clearly articulated situation reports to the international assistance community (including EADRCC and UNOCHA) to ensure transparency and effective provision of appropriate assistance in a timely and coordinated manner. (ED, RW)
9. Regional assistance providers neighboring an Affected Nation should make efforts to improve their coordination and communication with one another prior to an actual disaster. (RW)
10. BSI nations should review their public information strategies for disaster response situations and develop such strategies if they do not already exist. NATO's "Budapest Guidelines" could provide a potential reference for public information management in crisis situations. (RW)
11. Future BSI TTX events should continue to include orientation activities and exercises that support development of the littoral nations' public information capacities for disaster response scenarios. NATO's "Budapest Guidelines" could provide a potential reference for public information management in crisis situations. (ED)

Module 3

12. Black Sea nations should apply to future real-world scenarios the lessons learned from the Albatross TTX experience regarding requesting and coordinating international assistance to mitigate the effects of stressed healthcare systems. (RW)
13. Future BSI TTX scenarios should include MSELs that exercise coordination of international assistance for containment of disasters. (ED)
14. Future BSI TTX should be designed to incorporate international recovery assistance, to include placement and location of teams as well as coordination of arrival. (ED)
15. Future TTX should integrate more public information injects throughout the modules to stimulate information sharing with populations on the impact and status of disaster response, containment, and recovery assistance. (ED)

3. Functional Recommendations

These recommendations, broken down by functional category as observed by functional AAR officers, pertain to real-world and exercise design issues and are coded accordingly.

a. Standards and Procedures

1. National cells could do a better job of using standard message formats designated for exercise use (both those existing EADRCC formats as well as proposed formats, in this case the OPCW reporting templates). (ED) In real-world application, consistent use of standard forms, particularly where common language and translation capabilities are limited, can facilitate better communication as well as more rapid and effective coordination in responding to emergencies. (RW)
2. Nations should review whether their national response plans and procedures facilitate communication with local authorities, especially local medical personnel who are critical to initial chemical release response, in terms of local knowledge, and conveying basic information to the public to maintain calm in the population. (RW)
3. Nations should ensure their national response plans facilitate the utilization of and coordination with relevant international bodies such as OPCW, UN-OCHA, EADRCC, and other appropriate organizations to avail of the additional assets and mechanisms that can be brought to bear to mitigate and contain the emergency. (RW)

b. GIS

1. Familiarity with the latest commonly used GIS tools, in this instance ArcGIS 9.x, needs to improve. (RW)
2. There needs to be a better understanding of the possible role of GIS in supporting disaster response, as well as the potential support BSI nations can provide each other with GIS products. (RW, ED)
3. Future TTX should integrate concepts which promote regional GIS coordination. (ED)
4. BSI and CMEP GIS activities need more refinement in order to enhance individual and national-level skill development/capabilities and better measure progress. (ED, RW)

c. Public Information

1. National delegations should provide consistent participation by public information delegates throughout the planning and execution phases of the BSI TTX series to support better learning and application of knowledge. (ED)
2. The BSI media and public information training program should continue as it meets the participating countries needs. The open dialogue enabled shared learning between the littoral nations and the visible momentum was demonstrated at the TTX, through increased engagement in interviews as well as in the coordination and transmission of responses to the media queries. (ED)
3. Each littoral delegation is encouraged to assign a public information specialist to the communications protocol working group in order to aid development of a regional response plan within the public information arena. (RW, ED)

4. National Recommendations

The following represents a compilation of recommendations based upon observations and comments by national delegations from each of the participating littoral nations

- a. **Message Formats:** Given concerns expressed by several littoral nations regarding the applicability of the standard message formats designated for use during the BSI TTX, the following issues should be discussed and reviewed in the Standards and Procedures Working Group prior to the next TTX: (1) BSI standard message formats should be reviewed for consistency with standard operating procedures of EADRCC and CMEP-C South East Europe (SEE) Handbook; (2) The role of the Coordination message should be clarified; (3) The role of standardized message numbering/coding (with type, country and number) needs to be discussed, since some nations were skeptical as to the utility and applicability of this aspect during

- b. **MSEL Injects:** More precise time scales (real to operational) should be developed for future TTX events. Questions should be stated more clearly and the intended response recipient should be more clearly indicated to players in the MSEL injects. A few nations commented that more time was spent answering Control Group injects than working as an EOC (exchanging messages to request assistance); they recommended that future TTX structure should have more direct communications and connections between NEOCs and less between ECG and NEOC.
- c. **NEOC Computer/Network Setup:** To facilitate more efficient response and flow of information, one nation suggested that more computers should be provided to each of the NEOCs (three computers per NEOC instead of two). Another nation suggested that in terms of information sharing and distribution during the TTX, a shared network folder should be used rather than sending attachments back and forth to one another
- d. **TTX Module Design:** One nation suggested that any future TTX have one discreet event per module, as this TTX was difficult with the requirement to continue to respond to events that started in Modules 1 and 2 during Module 3.
- e. **Future Scenario Aspects and TTX Participants:** One nation suggested building the activities of NGOs into the scenarios of future exercises as well as inviting and including both national/local Red Cross as well as the IFRC
- f. **Hot Wash:** Several nations recommended that more time be allocated for Hot Wash preparation.

5. Observer Recommendations

- a. The role of national Red Cross organizations (as conduits to the larger IFRC network) should be included in future TTX.
- b. Notification messages sent by Affected Nations should contain more detailed information than was included during the TTX
- c. Participants should take lessons learned from the TTX back to their home nations and establish efforts to work more effectively with the media and to establish more effective local community relationships.

6. Administrative Recommendations

The following recommendations are based upon an evaluation of the mechanics of exercise development and execution. Some pertain to exercise design.

a. Exercise Development

1) Host/Sponsor Arrangements

Develop a clearly identified set of guidelines for hosting a TTX (which delineates host and sponsor responsibilities) to be discussed and agreed upon between sponsor and host prior to initiating the planning process for the next BSI TTX. These guidelines should include identification of working-level contacts for development of the exercise as well as key focal points for the event execution (to include the areas of administrative support, exercise control, Hot Wash facilitation, and media/public information focal point).

2) Scenario Complexity

Future BSI TTX should employ a basic scenario with one major event, which can be developed in a way that can engage all TTX players (such that it stimulates the stand up of their NEOCs) and that stimulates regional and international coordination to respond to and mitigate the effects of the disaster.

3) Public Information Activities

If Public Information is to be an objective and a priority for future TTX events, this aspect should be better streamlined into the planning, development, and execution of the event. This requires attention of the planners, sponsors, and host. There needs to be more interaction between this group and the scenario development group during the Initial and Main Planning Conferences, and clear leadership support needs to be conveyed for the role and priorities of Media and Public Information in this series. Attention should be given to cultivating appropriate participants (through the invitation and registration process). Event administrative coordinators and planners need to allocate appropriate meeting space and sufficient time on the agenda for this group during the planning and execution stages.

4) Identification of Registered Participants

Administrative Coordinators for future BSI planning sessions as well as the TTX should collect and share lists of registered participants with the facilitators once the registration deadline has been reached (perhaps also a week prior to that date), to include the names as well as role assignments for each participating delegation.

5) Event Planning

- a) Hosts and sponsors need to work closely together and maintain clear lines of communication, with regular updates via email and telephone to ensure that both parties are in agreement on the planning and execution and that any concerns can be worked through in a timely manner prior to events. Both parties need to be responsive to email queries and take into account time zone differences. Host and sponsors should each designate point persons or focal points to handle administration/logistics, as well as exercise substance and agenda issues. The decision chain should be determined at the outset, preferably prior to the Initial Planning Conference. The roles and expectations of all event organizers, facilitators should be clearly identified as early as possible, per agreement between the host and sponsor.
- b) Hosts need to determine realistic needs for interpretation support during the IPC, to ensure adequate numbers of qualified interpreters are available (for the MPC and TTX, plenary and VIP sessions, as well as for the breakout WG sessions, and for assisting players during the TTX execution). If event budget cannot cover this requirement, participants should be advised to bring their own support as needed. A sound isolation system should be employed during the plenary session of the MPC and TTX so that interpreters' voices do not drown out plenary speakers.
- c) Public Information should be better integrated into exercise planning events from the outset. The Public Information Working Group should continue to feed relevant injects and questions to the PEWG for inclusion in the Master Scenario Events List.

6) Working Group Structure

- a) BSI nations should maintain the structure of one Steering Group and three working groups (Plans and Exercises, Standards and Procedures, Media and Public Information) where GIS experts participate in the PEWG and Public Information delegates provide input to both the PEWG scenario developers as well as to the Exercise Guide development undertaken by the SPWG.
- b) BSI nations should strive for more continuity of national participants in working Groups for each of the consecutive planning conferences to better integrate lessons learned from earlier TTX events, and build exercise planning and development capacity amongst the participants

7) Planning Meeting Structure Schedule

- a) Retain planning meeting structure/schedule to include at least a bilateral Initial Planning Meeting (IPM) (host and U.S. sponsors), a multilateral Initial Planning Conference (IPC) (all BSI nations), and multilateral Main Planning Conference (MPC). Plan to also include either a multi-lateral Final Planning Conference (FPC) or a bilateral Coordination meeting (host and U.S. sponsors) between the MPC and the TTX.
- b) Invite representatives of all relevant regional and international disaster response related organizations as well as scenario specific organizations to planning meetings. Ensure that relevant subject matter experts are invited to present and/or serve as technical advisors to event planners at the IPC and MPC.
- c) Ensure event invitations are sent out in a timely manner via fax/and or email and that written communication is followed by phone call follow-up to ensure participation of key invitees.

8) Participation in Planning Meetings

- a) As noted in reference to working group participation, nations are encouraged to send the same people to planning activities to build upon lessons learned and leverage experience gained from previous events.
- b) The U.S National Guard State Partnership program should continue to be leveraged for attendees to observe and assist during planning and execution of the TTX.
- c) Care should be taken to give plenty of attention and notice to invitations of international experts from scenario-relevant regional and international organizations. These experts should be invited to attend both planning conferences as well as the TTX to ensure realistic scenario development and realistic representation during the exercise. Such participants should get ample advance notice to ensure their ability to attend.

9) Scenario Development

- a) PEWEG should continue to be the key forum for development of the scenario MSELs, with participation of scenario relevant representatives of all littoral nations, input from the GIS and Public Information communities, and the benefit of subject matter expertise.

- b) Scenario specific Subject Matter Experts should be identified and invited to participate in the MPC (both the plenary and the PEWG sessions) to inform scenario development.
- c) Those involved with scenario and MSEL development are to be trusted agents and should keep the MSEL secret from exercise participants to maintain the integrity of the TTX.
- d) Ensure draft exercise scenario and timelines, as well as module objectives, are appropriately vetted during the IPC with adequate expert review prior to the MPC to allow the PEWG maximum time to devote to MSEL development (as opposed to scenario revision) during the MPC.

10) Procedures Development

- a) The SPWG should review existing EADRCC standard message formats used for coordinating assistance, focusing in particular on the areas of concern observed during Albatross to include message numbering and identification as well as references to times (deployment versus asset availability). The SPWG should also discuss other appropriate regional or international standards and procedures for consequence management and review the necessity of the “Coordination” message format. Where current procedures are lacking, the group should entertain the development of experimental standards and procedures relevant to the TTX scenario. In developing future exercises, the PEWG should consider using formats developed by participants during both the TOMIS and Albatross TTX.
- b) The SPWG should develop scenario-specific exercise guide for TTX participants that lays out relevant standards and procedures as well as illustrates implementation methods (such as the notional methodology for response to chemical release scenario included in the Albatross TTX exercise guide). This guide should build on work already done for the Tomis and Albatross BSI TTX guides taking into account the lessons learned from both exercises. The Exercise Guide should be widely distributed in electronic form to each registered participant in the TTX well in advance of the event to allow time for review and possible translation in advance of the exercise. This guide should also be posted to an online Web site, as was done by PIMS for TOMIS and Albatross, to enable participant reference prior to and during the exercise. Hosts and Exercise Developers should ensure that participants are made familiar with the location of the appropriate reference materials (including this guide) on the TTX website.

- c) Adequate orientation time should be allocated for exercise participants to ensure familiarity with basic EADRCC message formats as well as other scenario relevant communication formats (existing or proposed experimental forms).
- d) The PEWG should include a public information package in future exercise guides that provides examples of press releases and public information bulletins that are relevant to the exercise scenario. Public Information approaches gleaned from littoral nations' Public Information Plans should be included in the Exercise Guide.

11) GIS Development

- a) Exercise planners and National players should continue to design and utilize GIS products that assist participant information sharing as well as decision-making during exercise play.
- b) Nations should work on contributing more relevant national data to GIS databases and tools to provide for more realistic and useful GIS application during the exercise.
- c) Exercise planners should continue to integrate GIS database development with exercise scenario development, through participation of GIS experts in scenario development sessions of the PEWG.

12) Steering Group Engagement

- a) Exercise hosts and planners should continue to provide an opportunity for senior level delegates from each of the littoral nations to meet in the Steering Group format during the IPC, MPC and TTX to discuss and review BSI objectives, recommended scenarios, strategic direction, future activities and timetables, as well as future TTX hosts.
- b) Exercise hosts and planners should allocate plenty of work session time for the Steering Group during planning meetings and the TTX.
- c) Event planners should encourage Steering Group participants to observe TTX Execution as well as Working Group activities and brief-backs during planning meetings. Ensure that they have adequate opportunity to do so by taking into account in developing their schedule.

b. Exercise Execution

1) Exercise Control Group

The placement of key international organizations in the ECG as players/controllers is appropriate and should be repeated in future BSI events.

2) Master Scenario Events List Injects

Future BSI TTX MSELs should be constructed with injects that are accompanied by fewer, more focused questions. The questions can be sent after the initial event inject, providing adequate time for players to first react to and act on the event inject before answering questions about their national response plans. MSEL developers should provide injects that will allow for maximum participant play, and bring in maximum participation without getting stalled on the affected nations' slowness to act. The event planners, hosts, and participants should consider whether they would like to have each module handle a distinct event or whether they desire overlap of events during all three modules. If events are to be continuously played out over the three modules, hosts should be encouraged to consider limiting the scenario to one or, at maximum, two major events in order to allow for more depth of response to those two events.

3) Exercise Information Technology: Communications Infrastructure/IT Support

- a) Exercise planners should continue to utilize the PIMS exercise support model for a proven reliable resource for portable on-site information technology infrastructure.
- b) Exercise planners should continue to utilize the support of experienced PIMS local In-Country Coordinators (ICCs) in conjunction with DC-based PIMS management/program officer teams for seamless event and exercise IT management.
- c) Exercise planners should ensure PIMS exercise support equipment and personnel arrive on site adequately in advance of participant arrival to ensure time to adequately set up and test equipment and network.

4) BSI Web Portal/Web Mail Communications Tool

- a) Exercise planners should build upon the PIMS developed BSI Web Portal utilized successfully in Albatross TTX, to post references and tools directly

related to the execution of the TTX. Include key items such as the Exercise Guide, Administrative Instructions, Agenda and the BSI TTX Web Mail Communication Tool.

- b) Exercise developers and PIMS should continue to use and build upon the user-friendly BSI TTX Web Mail Tool used during Albatross for exercise communications in the next BSI TTX.

5) TTX File Directory Structure/Content/Permissions

- a) In future, the exercise development team should determine the information requirements and data access needs for TTX players, providing recommendations based upon those requirements to PIMS prior to event execution. The event sponsor's senior TTX leadership needs to agree to this structure as well as determine who should have permissions to amend this structure. Any amendments of the file structure during the event should be done in coordination with the exercise development/execution support team.
- b) During the TTX there is a need to vet information intended for upload to the file structure through the ECG with the exercise support team, in order to avoid uploading confusing or contrary information and to ensure information is placed in the proper location.

6) TTX Format

- a) Exercise planners should retain the TTX Exercise format used in Albatross that provided participants face-to-face contact with personnel from other nations with whom they would need to interact during actual emergencies and facilitated development of social networks for improved official working relationships.
- b) Exercise planners should retain the Hot Wash format utilized during Albatross, where a Hot Wash was held following each module that allowed nations to hear different perspectives from each of the officers (national and functional) as well as discuss options for improved response capabilities with all participants during the unstructured plenary session.
- c) Exercise planners and scenario developers should keep the TTX scenario Master Scenario Events List close-hold for a more realistic exercise that forces participants to think on their feet and utilize their existing response plans and procedures to address the situation.

7) Facilities

- a) Exercise planners should seek facilities with conference rooms in proximity of hotel rooms (preferably at the same hotel).
- b) Exercise planners should seek TTX facilities which have adequate space for break-out as well as plenary sessions, have a nearby coffee break area, and have a conveniently located “internet café” and an administrative/copying area.
- c) Exercise planners should seek TTX facilities with adequate Internet connectivity (preferably with high-speed external connection and wireless capability within the facility) and business facilities to include copy machines, projectors, screens, and printers. If not, arrangements should be made by the host and sponsors to bring all of the necessary capacities.
- d) Exercise planners should ensure all participants can stay in the same hotel or hotels nearby during the planning meetings and the TTX.
- e) Exercise planners and hosts should ensure there are lunch options nearby or arranged at the hotel for all participants (to include facilitators and non PfP attendees) which are affordable, and available within a reasonable time frame to enable all participants to eat in time to participate in the full work program.

8) Preparing Participants, Pre-Arrival

- a) Exercise planners (sponsors/hosts) should ensure timely invitation of participants that explain event goals and expectations, note expected participants roles for meetings, give clear directions as to what is (and what is not) covered financially, and contain a clear RSVP deadline to participants from littoral states as well as regional and international organizations.
- b) Exercise Planners should distribute a preliminary agenda to invitees.
- c) Exercise planners, sponsors, and hosts should ensure focal points are clearly designated to oversee invitations, RSVPs, travel, and funding arrangements for the variety of participants.
- d) Exercise planners should send invitations to U.S. based participants in a timely manner, clarify whose responsibility it is to extend such invitations, and ensure that a letter of invitation that clearly states roles and expectations

of the participants as well as a registration form are sent to all participants well in advance of the event deadline.

9) Orientation/Support of Participants On-Site

- a) Exercise hosts should ensure adequate language interpretation support is made available for the plenary and the breakout orientation sessions. Provide translation/interpretation staff copies of briefings prior to actual plenary presentations to assist in accurate language translation.
- b) Exercise planners should maintain the orientation group for Public Information delegates scheduled such that it allows for participants to attend other relevant orientation sessions (such as for the NEOC) to inform their participation as part of their national team in the TTX.
- c) Exercise planners should structure orientation sessions that address all the general objectives, scenario, and mechanics of play and then breaks out categories of participants for specific play instruction as was done for Albatross TTX (i.e., National Emergency Operations Center Players, Exercise Control Group, Controllers and After Action Officers, GIS Experts). The orientation schedule should be developed in advance with the agenda and facilitators coordinated in a way that reinforces TTX objectives and allows all players to attend appropriate sections.

10) Exercise Schedule/Time Allotted

- a) Exercise planners should maintain the balance between presentation time and Q&A during plenary sessions.
- b) Exercise planners should allocate more time to the agenda to prepare for and conduct Hot Wash sessions during the TTX.

11) Administrative Support

- a) Exercise hosts should ensure adequate availability of Secretariat during the entire TTX timeframe, including access to facilities (such as copiers, computers, and printers) to presenters, facilitators, and controllers outside of exercise play time.
- b) Exercise hosts should have an advance core Secretariat team available prior to the TTX who can produce and bring copies of the handouts and put them together in the participant packets, such that agendas, name tags and participant packets are available prior to the start of the event.

- c) Exercise hosts should designate a focal point to coordinate with the sponsors POC on registration, sign-in and maintaining up to date participants lists, broken out by country, organization, TTX role and working groups as appropriate.

12) Public Information/Media Interaction

- a) Exercise planners should continue to include Public Information aspects in future TTX and do a better job of integrating these aspects into the scenario early on through discussion and inclusion of Public Information representatives during planning sessions (IPC and MPC).
- b) Exercise planners should continue to provide support and preparation of public information participants from national delegations by the Media Public Information Mentors/Facilitators during planning, orientation, and exercise play.
- c) Exercise planners should incorporate adequate numbers of Public Information facilitators in the TTX in order to provide both assistance with real world media events during the exercise as well as to act as control group mentor, facilitator and after action officer (ideally a different person than the one dedicated to working with the press).

c. Exercise Evaluation Issues

1) Hot Wash/After Action Review

Future BSI TTX should employ a hybrid of the model that was adapted during Albatross 2007, in which the host nation designates a Hot Wash/AAR facilitator to lead the Hot Wash and AAR sessions and each nation must provide and present its own comments on the TTX play during those sessions. A caveat will be that nations should be encouraged to be self-critical and should be encouraged to send a controller/observer who is not playing to convey the Hot Wash and AAR comments. It would be instructive if the topical facilitators (GIS, Public Information, Standards, and Procedures), as well as the participating player/controller IOs were given an opportunity to share their comments during both the Hot Wash sessions and the AAR session.

2) National Response Plans and BSI Impact

Build a mechanism into future BSI TTX that surveys the current NRPs of each of the participating nations, and asks them to discuss in what ways their plans have changed

over the years, and how what they have learned during the TTX has impacted or contributed to changes in those plans.

E. WAY AHEAD

Much fertile ground exists for the Black Sea Initiative to cover in future Table Top Exercises. Albatross and the planning activities leading up to the exercise continued the trend established in the Tomis International 2005 TTX for the enhancement of partnership and coordination within the region.

Albatross continued fostering the development of professional relationships among nations, disciplines, and organizations, in an exercise scenario that incorporated the plausible threats and challenges that currently exist. The participants were able to utilize a no-fault environment to employ their existing national-level plans and existing regional and international protocols and capacities in a chemical consequence management response. Through the demonstration of the strengths and weaknesses of these plans and procedures, lessons were identified by the controllers, the participating international organizations, and the nations themselves for generic disaster response and chemical-specific response requirements (oil spills, toxic industrial chemical release, chemical weapons agent Sarin release). These lessons can be taken back home for consideration in revising national and international response protocols.

The BSI TTX series should build on the lessons of Albatross 2007 and integrate as much of that learning into the design of the next Table Top Exercise. These Table Top Exercises can continue to serve as a facility for testing and improving national, regional, and international response plans. They can continue to facilitate relationship building among the disaster response experts in the neighboring countries as well as with their key counterparts at relevant international organizations (such as UN-OCHA, EADRCC, OPCW, and others). The Black Sea Initiative can serve as a regional activity on which existing regional fora such as Black Sea Economic Cooperation, Black Sea Forum, and BLACKSEAFOR can build for improved security in the Black Sea basin.

The BSI Steering Group took the first steps toward defining the future activities of the Black Sea Initiative at its meeting held during the Albatross TTX in February 2007. During that meeting, the senior representatives of each of the littoral nations identified several nations that are willing to host Future BSI TTX events. The Steering Group announced that Moldova specifically expressed interest in hosting the next BSI TTX in 2008. Planning for this will begin in the fall of 2007. Turkey expressed interest in

hosting a future event, which the Steering Group warmly endorsed. Table 1 below charts BSI TTX host countries (past and future) as well as potential scenarios.

Table 1. BSI Way Ahead: Future TTX Hosts and Scenarios

BSI Host Countries	TTX Year	Natural Hazards	Technical: Accidental	Technical: Deliberate use of CBRNE				
				Chem	Bio	Radiological	Nuclear	High Yield Explosives
Romania	TOMIS 2005				Variola			
Russia								
Bulgaria								
Georgia	Albatross 2007		Oil terminal explosion, fire, and spill	Sarin				Dimethylhydrazine (rocket fuel in train car, intentionally ignited)
Moldova	2008							
Turkey								
Ukraine								

Georgian-hosted Albatross 2007 continued to build on the foundation established by Romania in 2005 for greater cooperation and coordination in the realm of disaster response in the Black Sea region. BSI sponsors and the littoral nations have taken the initial steps for activity in 2008 and should continue to push forward in this highly beneficial security-building activity, branching out with different hosts and taking on new challenging scenarios over the coming years.

I. INTRODUCTION

A. PURPOSE

This After Action Report (AAR) evaluates the observations drawn from conduct of the Civil Military Emergency Preparedness (CMEP) program's Black Sea Initiative (BSI) Table Top Exercise (TTX), Albatross 2007, held February 12-15, 2007 in Batumi, Georgia. Albatross 2007, hosted by Georgia and financially sponsored by the U.S. Department of Defense (DoD), was the second TTX held under the auspices of the Black Sea Initiative, which is an activity agreed to by the Black Sea littoral nations (Bulgaria, Georgia, Moldova, Romania, Russia, Turkey, and Ukraine) during an exploratory conference held in Varna, Bulgaria, in October 2004.¹ This AAR presents conclusions by the five participating nations based on observations of national, regional, and international coordination in the area of civil-military emergency preparedness in response to disasters. The report's conclusions evaluate the exercise in terms of the overarching objectives of the CMEP Black Sea Initiative based upon the achievement of Albatross TTX Exercise objectives, as measured by observations of the Exercise Control Group's (ECG) After Action Team.

The conclusions of this report should serve as a knowledge base for future Table Top Exercises hosted as part of the Black Sea Initiative, to support the continued improvement of national, regional, and international coordination in response to the full spectrum of disasters that could affect the Black Sea littoral states. In particular, this initiative seeks to improve the consequence management capacity of those states to respond to man-made disasters, to include those caused by the intentional use of Weapons of Mass Destruction (WMD), specifically Chemical, Biological, Radiological, Nuclear and High Yield Explosive (CBRNE). National participants from the Black Sea region can use experience gained through the Table Top Exercise, as well as the conclusions from this After Action Report, to reinforce their successful response

¹ Russia was invited to the Varna conference and expressed interest in the BSI concept, but did not send delegates to that meeting. Russia participated in the Main Planning Conference (MPC) and the final Table Top Exercise for TOMIS 05, hosted by Romania, but did not participate in events supporting Albatross 2007.

practices, and inform, where appropriate, improvements to their current national response plans. International Organizations can use the conclusions from this TTX AAR to inform the development of their policies and capacities in a way that best meets current and projected future response needs, particularly where gaps in current international systems or capacities are identified.

B. BACKGROUND: BSI

The U.S. DoD's CMEP program began in 1994, to assist NATO's Partners for Peace with multi-national Planning Exercises (PLANEX) and evolving information management know-how. Romania, Lithuania, and Ukraine hosted the first events, before a deliberate series of CMEP Workshops was hosted by and for Partner nations of South Eastern Europe (SEE) between 1998 and 2002.

In those Workshops, the Civil Protection leaders of the Partnership for Peace (PfP) Partner nations of SEE were supported by an annual forum of their Defense Members (the South East Europe Defense Ministerial [SEDM]). With assistance from the U.S. Department of Defense, U.S. Army, the Institute for Defense Analyses (IDA), and the DoD-furnished Partnerships for Peace Information Management System (PIMS), participants developed and conducted Table Top Exercises to identify needs for supporting databases and to develop a common base of understanding for Geographic Information Systems (GIS) coverage and mapping capabilities.

From that series, the Partner nations created the CMEP Council of South Eastern Europe (CMEP-C SEE), with the goal of facilitating cooperation in emergency planning among the member nations. Participants now include Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Greece, Macedonia, Romania, Slovenia, and Turkey. Greece and Italy have participated in many activities of the Council, which is independent of DoD, and led, in succession, by Heads of Civil Protection of the member nations. The Council's Working Groups have drafted a handbook incorporating policies and procedures from the Euro-Atlantic Disaster Response Coordination Center (EADRCC) and United Nations Office of the Coordinator for Humanitarian Affairs (UN OCHA) Military-Civil Defense Assets (MCDA) database.

In 2004, Bulgaria's State Agency for Emergency Management and the U.S.'s DoD began an initiative to increase and focus cooperation among the Black Sea littoral nations to increase emergency preparedness. In October 2004, Bulgaria invited the littoral nations to Varna for a conference to discuss such possibilities. This effort, which

became known as the Black Sea Initiative (BSI), was informally approved by national representatives from Bulgaria, Moldova, Romania, Turkey, and Ukraine, with Georgia's representative concurring in absentia. Representatives of Ministry of Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM) expressed interest, but regrettably were unable to attend that Conference.

During the Varna conference, a consensus was reached that the initiative would support the responsibilities of the littoral states as stated in the Moscow communiqué of 7 July 2004, the Black Sea Economic Cooperation Foreign Ministers meeting of 25 July 2004, and the Black Sea Naval Task Group (BLACKSEAFOR). It also was agreed that a series of Table Top Exercises would be developed to assist the littoral nations in planning to protect populations of their commercial port cities.

In Varna, participating nations insisted that the BSI be committed to work with existing regional and international structures and processes wherever possible, and avoid creating any new structure. Some examples of existing structures include the following:

- The Black Sea Economic Cooperation (BSEC) process
- The Black Sea Naval Cooperation Task Group (BLACKSEAFOR)
- NATO's (in EAPC format) Euro-Atlantic Disaster Response Coordination Centre (EADRCC)
- The UN Office of the Coordinator for Humanitarian Assistance (OCHA)
- Interested emergency planning structures such as European Union/Commission.

At Varna, it was determined that BSI will focus on consequence management for the full range of natural and manmade disasters, including those caused by WMD, such as CBRNE, affecting Black Sea commercial ports and nearby populations.

1. The Genesis of the Table Top Exercise (TTX)

According to the concept of the BSI, the U.S. DoD (led by the U.S. Army Corps of Engineers and supported by IDA) is to assist littoral nations of the Black Sea to cooperate in a series of Table Top Exercises that they will host and lead. Each exercise is designed to improve both Host Nation and cooperative multi-national processes to plan and prepare for response to threats and risks to their populations, with a focus on their *commercial seaport cities*. U.S. financial support is to be provided "in the Spirit of Partnerships for Peace (PfP)."

U.S. DoD support of the BSI intends to help these nations achieve the following overarching objectives:

- Assist nations to assess and improve inter-ministerial and multi-national cooperation to plan for response to catastrophic risks to their populations
- Support and promote existing national, regional, and international structures and standards for response
- Apply the internationally agreed policies and standards adopted by UN-OCHA, NATO's EADRCC , and other international bodies as appropriate, with an emphasis on the use of EADRCC processes
- Assist PfP Partner nations and cooperating EAPC members to develop Emergency Management database and Internet-based communications tools
- Promote regional data contributions to and use of the CMEP Black Sea Viewer and related geospatial tools.

The U.S. DoD supports use of the TTX format to employ its resources efficiently and effectively during multi-national exercises of national level structures.

2. TTX Planning Process – Exercise Working Groups

To support the Black Sea Initiative, the participating nations have agreed to utilize a planning construct that consists of a steering group and three working groups to help prepare for and evaluate a series of Table Top Exercises to be conducted within the framework of this initiative. The working groups utilized for Albatross 2007 were (1) Standards and Procedures, (2) Planning and Exercises, and (3) Media and Public Information. The working groups are not a formal or permanent arrangement. They meet during scheduled planning conferences for BSI events to work out the details necessary to plan, conduct, and evaluate the Table Top Exercises.

The Steering Group comprised senior delegates (typically the heads of national civil protection organizations) and officials from each of the participating nations to guide the longer term development of the TTX and outline future BSI activities to meet agreed upon objectives.

The Standards and Procedures Working Group (SPWG) developed and promoted use of existing standards and procedures to facilitate exercise communication and coordination for adequate and timely response to national requests for disaster or emergency assistance, in this case, an oil, chemical and WMD release crisis. SPWG members were invited to assist with evaluation during the TTX, participating as After Action Officers. Standards and procedures involve identifying and understanding the

BSI nations' national and regional procedures and agreements for disaster and emergency preparedness, and how they relate to international procedures.

The Media and Public Information Working Group (MPIWG) facilitated orientation of national delegates to prepare for and respond to media inquiries and public information requirements associated with disaster response scenarios. This group also served to develop public information injects for TTX scenario play as well as to develop public release materials aimed at publicizing the TTX in the host country, the Black Sea region as well as with each of the participating nations. The facilitator of this group provided mentoring support during the TTX and supported the Exercise Control Group with feedback on scenario module play, and served as an AAR facilitator.

The Planning and Exercise Working Group (PEWG) developed the TTX scenario to meet the objectives of the Table Top Exercise; it included scenario planners as well as GIS delegates. The working group's major activities included: developing injects for the Major Scenario Event List (MSEL); developing questions for the Exercise Control Group (ECG); developing injects and questions specifically designed to stimulate employment of GIS; coordinating GIS expert mentors who support GIS delegates during the TTX and support the ECG through provision of scenario related feedback as well as inputs to the AAR; drafting the exercise evaluation plan; and serving as controllers and evaluators during the exercise.

3. TTX Methodology

The TTX scenario was used primarily to allow nations to employ existing national response plans and their provisions to either request and receive or give assistance to regional neighbor nations.

The facilitated TTX assisted nations in identifying and developing information resources to improve the speed and effectiveness of responses to threats to populations for all hazards, whether natural or manmade, e.g., terrorist incident.

TTX play used existing processes and standards such as the EADRCC standard message formats, UN-OCHA MCDA response modules, OPCW notification and response protocols, and other international standards and procedures as appropriate to the exercise scenario.

The TTX Hot Wash and AAR sessions aimed to facilitate discussion amongst participants to help identify weaknesses in existing policies and procedures and develop sustainable solutions.

The TTX Lessons Learned will assist the littoral nations in their further development of national response plans that are consistent with existing international standards, and in their cooperation for planning wherever possible.

II. ALBATROSS 2007 TTX

A. OVERVIEW

Albatross 2007, carried out during a 4-day session in Batumi, Georgia, featured a chemical consequence management scenario. It was conducted in three modules of approximately 3 hours each. The three major scenario events included an oil terminal explosion resulting in a fire and spill in the Batumi Sea Trading Port; the explosion and derailment of a train car carrying rocket fuel, resulting in a toxic cloud; and the release of a chemical WMD, Sarin, in a Batumi park. Representatives from the EADRCC, UN-OCHA, and the Organization for the Prohibition of Chemical Weapons (OPCW) Verification and Response Branch participated as controllers/players. Observers were present from Azerbaijan, Armenia, Croatia, the Asian Disaster Reduction Centre (ADRC), and the International Federation of Red Cross and Red Crescent Societies (IFRC).

The event began with a day of orientation briefings and breakout sessions to prepare participants for the TTX. After a rehearsal, TTX play commenced on the afternoon of the second day and ran through the third. Each of the three TTX modules was followed by a Hot Wash session during which each nation presented its observations and comments to the assembled plenary, and the final day commenced with an AAR in which all participants were invited to provide their feedback on exercise play.

Throughout this event, the BSI Steering Group, consisting of senior delegates from each of the Black Sea littoral nations present, met to discuss the direction of future BSI events. At the conclusion of this event, the BSI Steering Group announced that Moldova has offered to host the next BSI TTX and that Turkey has expressed interest in hosting a future event, which the Steering Group warmly endorsed. Following the closing ceremony, the host nation held a press conference, in which senior delegates were invited to participate, and which was supported by the U.S. media facilitators. The Georgian hosts then invited all participants to a field demonstration of their Hazardous Material (HAZMAT) Response Capabilities.

B. ALBATROSS EXERCISE MECHANICS

Following the first BSI TTX, the Romanian-hosted Tomis International 2005, the Republic of Georgia volunteered to host the second BSI TTX and proposed that a scenario be developed to focus on consequence management of the deliberate release of oil, toxic industrial chemicals, and WMD agents in the Black Sea port of Batumi, Georgia. The event named “Albatross” (for the scenario’s fictional tanker where terrorists were captured prior to TTX start) was scheduled for February 2007.

The Albatross 2007 TTX was developed via a series of multi-lateral planning conferences held in Germany and Georgia in 2006 and 2007 (Initial Planning Meeting (IPM), GIS Orientation and Initial Planning Conference (IPC), and Main Planning Conference (MPC)). The generic scenario concept and the major events to be exercised were determined by the host nation at the IPC held in Wiesbaden, Germany in June 2006. It was determined that there would be three major events: oil fire and spill in the port; train derailment with rocket fuel tanker explosion resulting in release of toxic dimethylhydrazine cloud; and release of the chemical WMD agent Sarin. It was also determined that the TTX would be divided into three modules to facilitate focused exercise of the relevant coordination mechanisms.

Participants took advice from the Tomis AAR and agreed to revise the working group structure for the MPC in September 2006, to include the groups noted in the introduction. The changes reflected an elimination of the Information Technology and Management WG (utilized during TOMIS), folding in the GIS delegates from that group into the Planning and Exercises WG, with the creation of a Media/Public Information Working group. The function of these Working Groups during the MPC was to organize participant input in the development of the exercise and its scenario. The IPC participants also agreed to the BSI guidance role for the Steering Group during the MPC.

The scenario and procedural developers from these working groups were then recommended for the Albatross TTX Exercise Control Group as both Controllers and After Action Officers. It was made clear that those who developed the exercise were not to participate as players given their trusted agent status, but as controllers or evaluators only. Individuals who were unfamiliar with the scenario were to be selected to play as members of each of the exercise National Emergency Operations Centers (NEOC).

It was determined that each nation, led by a senior head of delegation who would participate in the Steering Group activities apart from the exercise play, would be able to send three “players” to the TTX for their simulated NEOC: a Civil Protection Expert, a

Chemical Expert, and a Public Information Expert. In addition, each nation was invited to have a GIS specialist to assist the NEOC with GIS map production, as well as a Controller/After Action Officer (from the PEWG or SPWG) who would assist with both exercise control and on-site evaluation of the TTX modules that were to be reported out to the entire group during each Hot Wash segment (following each module) as well as during the final After Action presentation on the final day of the exercise.

The After Action officers were also to send further comments or observations in writing to the After Action Facilitator (the primary author of this report) within two weeks of the conclusion of the TTX. Those inputs as well as the After Action and Hot Wash reports presented during the TTX were to be taken into account in the drafting of the comprehensive AAR. It was determined that the AAR report should be available in time to inform planning for the 2008 BSI TTX.

C. ALBATROSS OBJECTIVES

The purpose of the BSI Table Top Exercise Albatross was to promote inter-ministerial, regional, and international cooperation in mitigation and emergency planning in the Black Sea littoral nations by:

- Supporting and promoting existing international, regional, and national structures and standards for response to threats to populations, including natural disasters and terrorist incidents
- Applying the internationally agreed policies and standards, adopted by UN-OCHA, NATO's EADRCC (in EAPC format), and other international bodies as appropriate
- Assisting EAPC nations in developing emergency management GIS experience as well as spatial databases and Internet tools to assist in emergency planning and response
- Promoting regional data contributions to and use of the CMEP Black Sea Viewer and related geospatial tools.

To support the execution of the TTX, an Exercise Guide, TTX Administrative Instructions, and an online Albatross TTX web site were created and made available to participants during the exercise. The purpose of the Guide was to provide exercise participants with a ready reference for an oil, toxic industrial chemical, and chemical WMD incident response scenario. It complemented the Albatross TTX instructions that focused on administrative aspects of the TTX event.

The Albatross web site (developed and maintained by the Partnership for Peace Information Management System (PIMS)) was an essential tool for the exercise, serving as a central portal for the conduct of the TTX. Each participant could access the exercise communication tool (BSI TTX Web mail tool) through this Web site, as well as all of the relevant reference materials in support of the conduct of the exercise to include GIS sources, the Albatross Exercise Guide, and the TTX instructions.

The Exercise Control Group in particular found the modified Web mail tool quite useful in terms of the distribution of MSEL injects to participants, as well as for the ability to have a structured overview of player interaction during the TTX (through threaded views, views by subject, views by date, views by sender). The sponsors and the hosts of the exercise repeatedly emphasized the point that the TTX is meant to exercise existing national response plans and enable participants to test the application of regional and international response protocols as well. As such, a desired outcome of the TTX would be post-exercise national evaluations of those response plans and protocols, with an eye toward improving capacities to respond to the full spectrum of disasters. That said, it should be recognized that the U.S. does not possess a significant influence over whether nations choose to undertake any changes.

D. ALBATROSS SCENARIO

The following paragraphs contain the scenario setting, developed by the Georgian hosts for Albatross 2007. This was distributed to all of the TTX participations at the beginning of the exercise.

According to the information of the Ministry of Internal Affairs discovered on 11th February 2007, five unregistered passengers have managed to get on board the oil tanker “Albatross.” According to the schedule, the tanker should arrive at Batumi Port on the 12th of February.

After security forces from the Anti-Terrorist Center and border guard boarded the ship, they identified and took into custody those five passengers, who turned out to be members of a transnational terrorist organization. The interrogation revealed that their mission was to conduct a terrorist act in Batumi together with another group of terrorist already present in the town.

The terrorists that were captured on board the ship were planning to blow it up upon arrival at the port. The above mentioned plot was discovered due to the good work of the anti-terrorist center.

E. ALBATROSS TTX MODULES

The Albatross 2007 scenario was developed by national members of the Planning and Exercises Working Group during the Main Planning Conference in Georgia in September 2006 and further refined by the host and facilitators prior to the event in February 2007. The exercise was based on three modules with the following objectives. Each of these modules was to also address elements of public information at the national, regional, and international levels:

Module 1: Steps by nations to mitigate effects of oil terminal explosion, fire, and spill as well as train explosion and release of toxic cloud (initiate measures to protect population, request assistance as needed, inform public)

Objectives:

1. Mitigate effects of oil terminal explosion, fire, and spill as well as train explosion and release of toxic cloud
2. Initiate processes to request imagery in support of oil spill and train explosion mitigation
3. Initiate measures to protect population, request regional/international assistance as needed, inform public to include: Notifications, Requests for Assistance and Situation Reports by national civil protection/emergency management authorities:
 - a. **National Level:** Exchange information and situation reports for both incidents; determine chemicals released, treat those immediately affected, and refer to plume models to determine direction of cloud; act accordingly to mitigate effects of plume and oil spill spread upon people and ports
 - b. **Regional/International Level:** Notifications among affected nations for both incidents based on bilateral, regional, and international agreements/arrangements; act accordingly to initiate requests and offers of assistance to mitigate impact of oil spill and toxic plume spread.

Module 2: Steps to mitigate effects of possible chemical WMD exposure as well as oil spill and train explosion.

Objectives:

1. Employ national and international capabilities (medical and non-medical) and consequence management procedures to mitigate the possible chemical WMD exposure.
2. Continue to mitigate effects of the oil spill as well as the train explosion emergency

3. Initiate Public Information programs on all events for region and for international audience to include neighbouring nations, as well as home countries of the foreign tourists in affected areas. Assuage concerns about terrorist actions.

Module 3: Employ national and international capabilities (medical and non-medical) and consequence management to contain and begin recovery from the emergency.

Objectives:

1. Initiate coordination of all incoming international support to contain the incidents.
2. Initiate appropriate recovery measures for areas where incidents have been contained
3. Ensure Public Information programs continue to advise populations on the impact and status of all three major incidents.

III. OBSERVATIONS AND RECOMMENDATIONS

The first portion of this section will look at the overarching BSI Objectives, Albatross Module Objectives, TTX Functional Perspectives, and TTX National Perspectives. The second portion provides an evaluation of the mechanics of exercise development and execution, looking at the year-long process from the planning conferences through to the actual TTX event.

A. EVALUATION OF BSI OBJECTIVES

This section reviews each of the four overarching BSI objectives, noting how these objectives were met by the Albatross TTX, and, where they weren't, providing some findings and recommendations for improvement to meet those objectives.

1. Support and promote existing international, regional, and national structures and standards for response to threats to populations, including natural disasters and terrorist incidents.

a. National

All of the participating nations employed their existing national structures and protocols as a basis for their exercise responses. It was observed that these national structures and capacities were not always adequate to address the response needs specific to the oil, hazmat and chemical WMD events in the scenario. It was noted during the Hot Wash that National Red Cross elements which are essential to disaster response and consequence management activities at the local and national level, were not referenced enough during the course of the TTX; and while an IFRC observer attended Albatross, no host nation Red Cross national representative participated. An observer from Georgia's Maritime Rescue Coordination Center (MRCC) noted that many of the participating civil protection experts were not aware of their national maritime counterparts or the response roles they might play with existing assets or through littoral neighbors' assets which could be requested via existing mutual assistance agreements.

b. Regional

Other than bilateral agreements, no Black Sea regional protocols exist that could be accessed for response to a chemical WMD attack or deliberate release of toxic industrial chemicals. There is a regional arrangement for responding to oil spills which all littoral nations are a party, the Black Sea Regional Contingency Plan (BSRCP). The participants did not however make specific reference to this arrangement during the TTX.

The existing active regional protocols are on the level of NATO/EADRCC notification, assistance, and coordination procedures for EAPC nations (includes all of Black Sea Nations), European Union (EU) protocols for EU member nations through the “Community mechanism to facilitate reinforced cooperation in civil protection assistance Interventions” which covers civil protection as well as marine pollution response activities and which through the European Monitoring and Information Center (EU-MIC) is available to help affected nations requesting assistance access resources (including experts and satellite imagery) made available by other members of the Community (mechanism member Black Sea nations include EU candidate countries Romania and Bulgaria),¹ and CMEP-C SEE for those member nations (Bulgaria, Turkey, and Romania).

- During the exercise, most nations utilized EADRCC procedures, but not all utilized the proper message formats or templates for their notification, offers, or acceptances.
- The only CMEP-C SEE nations participating in Albatross were Romania and Bulgaria. CMEP-C SEE was not actively played and participants did not make mention of possible interactions with this group.
- During the TTX, one nation noted that they would work through the EU-MIC to provide assets for the oil spill response.

c. International

International structures and protocols were utilized during this exercise, although communications were not always adhered to in the preferred format. The primary international institutions whose structures and protocols participants said they would utilize and which they demonstrated use in their mock message communications included the OPCW and UN-OCHA. For the most part, nations who directed their

¹ European Union Council Decision of 23 October 2001 as accessed from European Commission http://ec.europa.eu/environment/civil/marin/mp06_en_contingency.htm.

communications to EADRCC did so with the knowledge that their notifications and requests would be shared and passed along from the EADRCC to UN-OCHA as appropriate. The IFRC was also noted by one country as an International Organization (IO) which they would work with and through to provide assets for the oil spill response.

- **OPCW** – OPCW received direct communications toward the end of the second module and in the third module. The final event (Sarin release) was the only one which would have necessitated contact of OPCW under current international protocols. Thus play and interaction with OPCW was consistent with the flow of the scenario.
- **UN-OCHA** – Appropriately, UN-OCHA received direct communications from all participants during the TTX, and interacted with the affected nation offering the deployment of United Nations Disaster Assessment and Coordination (UNDAC) teams as well as assistance in locating national response assets from the Military-Civilian Defense Assets (MCDA) database.

d. Findings and Recommendations

Finding (F) 1-A. Support Existing National Standards, Exercise the Role of the National Red Cross: While national standards were used during the TTX by each of the participating nations, it was noted that the role of national Red Cross branches was sparingly referenced during the exercise. The capacities of the Red Cross are a tremendous resource for supporting national level response, with reachback to the regional and international level. The IFRC attendee to Albatross indicated a desire to participate in the exercise development process for a future BSI TTX iteration.

Recommendation (R) 1-A. Future TTX should include local Red Cross as well as IFRC representatives as observers and/or participants. Future TTX planning should include briefings on the role of the Red Cross in disaster response at the local, regional, and international levels and future scenarios should build in injects to stimulate interaction with the Red Cross.

F1-B. Support Existing National and Regional Protocols, Exercise the Role of Maritime Aspects: The nations of the Black Sea each have national maritime elements in their governments which can play a role in disaster response at sea, relying on their own assets or accessing those of neighbors via existing mutual assistance agreements. Although these elements could have supported oil spill response, this aspect was not incorporated into Albatross and civil protection experts appeared to have little familiarity with those maritime elements.

R1-B. A future TTX could, depending on the scenario, include national maritime elements, including briefings on their roles and capacities during exercise planning sessions, incorporating these aspects into the scenario as applicable, with inclusion of maritime participants during the TTX as players or observers as appropriate.

F1-C. Support Existing International and Regional Standards: An major focus was on supporting existing standards through the exercise design, to include the participation of key international bodies, UN-OCHA, EADRCC, and OPCW, in the exercise. This inclusion responds to the recommendation from the TOMIS BSI TTX AAR and represents an improvement which injected to the exercise a much more realistic interplay between NEOCs and international organizations.

R1-C. Future BSI TTX events should include the appropriate international bodies as participants whenever possible.

F1-D. Improved Regional Coordination: In the Black Sea region, there is a lack of adequate regional structures and standards to address disaster response needs, including those required for consequence management in response to an intentional chemical WMD release by terrorists. The BSI TTX series could act as a testbed for proposed regional coordinating mechanisms.

R1-D.1. Nations in the Black Sea region should consider developing and refining regional capacities and protocols to enable quicker and more coordinated regional responses for the full spectrum of natural and man-made hazards. They could begin by offering up national equipment and units to the UN-OCHA Military-Civilian Defense Assets (MCDA) database.

R1-D.2. The BSI TTX series should adapt accordingly to include all appropriate regional coordination structures and protocols, whether real or proposed.

2. Apply the internationally agreed policies and standards, adopted by UN-OCHA, NATO's EADRCC, and other international bodies, as appropriate.

Similar to the first BSI TTX-TOMIS, during the Albatross TTX, nations generally reported that they would utilize EADRCC policies, standards, and processes. But when it came to applying them during exercise play, there was a lack of consistency and adherence to numbering protocol in communications. The templates were often not filled out clearly or in enough detail, leaving holes which required further coordination. The lack of clear marking on the subject line of the messages as well as the lack of distinguishing language in the message content, made it difficult to track the multiple

messages which were directed at response to the three major events which occurred during this TTX. Often confusing references (to time factors in particular) caused difficulty in coordination of assistance offers and acceptances. Knowledge of and adherence to standard message instruction and formats can enhance comprehension of message content, particularly where common language and translation capabilities are limited.

F2. Emphasize and support use of recognized policies and standards of UN-OCHA, EADRCC, and other relevant international bodies: Although most nations indicated they would utilize standard EADRCC protocols to request international assistance, not all nations consistently used and supported the recognized policies and standards of EADRCC and other relevant international bodies during the TTX.

R2. Future exercise orientation and preparatory materials should continue to emphasize participant use and adherence to internationally agreed policies and standards of UN-OCHA, EADRCC, and other relevant international bodies (such as OPCW in this scenario). The development of a web-based automated disaster request management system on the EADRCC website with pull down menus and automated numbering could potentially address some of these issues.

3. Assist EAPC nations in developing emergency management Geographic Information System (GIS) experience as well as spatial databases and Internet tools to assist in emergency planning and response.

Headway was made in achieving this goal. The GIS skills developed in orientation sessions (GIS Data Creation and Using GIS to support decision-making) were used effectively during the exercise. The nature of the questions and the facilitation by controllers elicited responses that were informed by GIS. GIS was also demonstrated as a decision support tool. There still needs to be a better understanding across the board of the role of GIS and how the BSI nations can support each other bilaterally and regionally. Two BSI nations proposed that a future concept be developed to incorporate a regional “GIS Team,” similar to the joint field office deployment of GIS experts which Federal Emergency Management Agency (FEMA) deploys during U.S. disaster events, into future BSI and CMEP events. This team concept would encourage pooling of data as well as regional coordination and information sharing. More details on this concept can be found in the GIS AAR appendix. It was also noted that there is a need to develop a way to measure GIS skills, and the GIS facilitators are developing a draft GIS familiarization/certification process.

F3. Although nations utilized GIS for emergency management coordination and decision-making during the TTX, application was uneven across the board given varied experience levels of participants. This area showed progress over the previous TTX, but the lack of a systematic approach towards developing individual and national civil and military GIS capabilities hampers progress. The civilian and military communities can benefit from a greater understanding and working knowledge of GIS tools: those in the technical community who are the current and/or future developers and users of GIS tools, and the operational responders and decision-makers who need to be familiar with the utility of the products generated by GIS for coordination, situational awareness, and decision-making in disaster response. The use of GIS is directly relevant to the goal of enhancing civil-military cooperation and interoperability.

R3-A. BSI organizers and hosts should continue to integrate GIS tool usage into the planning, orientation, and execution of Table Top Exercises. The sponsors and hosts should continue to brief participants on the various applications of GIS tools, giving the host nation and other experienced GIS experts from the region the opportunity to share their experiences in using the tool, as well as the opportunity to demonstrate its utility for their littoral neighbors.

R3-B. Focus GIS familiarization and skill development on the technical community (current and future developers/users of GIS) as well as the civilian and military decision-makers and operational responders who need to be familiar with the utility of the products generated by GIS for coordination, situational awareness, and decision-making in disaster response.

R3-C. Explore adoption of a BSI/CMEP GIS familiarization/certification program.

R3-D. Explore adoption of a regional GIS Team concept for the next BSI TTX.

4. Promote regional data contributions to and the use of the CMEP Black Sea Viewer and related geospatial tools.

Participating nations kept their national data in their own national databases during the exercise. Although they felt comfortable sharing completed products, they were more hesitant about sharing raw data regionally even when prompted to do so by scenario injects. A lack of comfort existed in holding the data in a regional database. Thus, limited data were added to the Black Sea viewer based upon regional contributions.

F4. Regional data contributions to the CMEP Black Sea Viewer, much less any related geospatial tools, did not occur during this exercise because of continued national sensitivities to sharing data. Nations were more comfortable sharing completed products. To tackle regional problems in the most efficient and effective manner, regional GIS information-sharing is paramount.

R4. In tandem with the recommendations for objective number three (R3), the BSI TTX series should continue to provide opportunities for GIS experts from the littoral region to work together to provide useful national inputs into GIS supporting databases with the goal of more comprehensive GIS tools such as the Black Sea Viewer. Illustrating the utility of pooled regional data for improved efficiencies in disaster response to policy level decision-makers might help to increase the level of trust and willingness to share more information with regional neighbors. The Regional GIS Team concept might also facilitate more regional information sharing.

B. EVALUATION OF ALBATROSS TTX MODULE PLAY

This section provides an assessment of Albatross TTX play vis-à-vis the exercise module objectives. The national responses to the MSEL injects and associated questions provide clues about the real-world preparedness of the littoral nations as well as the adequacy of the international and regional response frameworks for such a scenario. Lessons for improved exercise design and execution can also be derived from these observations.

1. Module 1

Objectives – Steps by nations to mitigate effects of oil terminal explosion, fire, and spill as well as train car rocket fuel explosion and release of toxic cloud (initiate measures to protect population, request assistance as needed, inform public).

- a. Initiate measures to protect population and mitigate effects of two major events: oil terminal explosion, fire, and spill; train car rocket fuel explosion and release of toxic cloud.**

Assessment: During this module, initial steps were taken by the Affected Nation and those who offered direct or coordination assistance (to include five Black Sea Nations playing as well as the EADRCC and UNOCHA) to mitigate the effects of the oil terminal explosion, fire and spill. After a slow start up (because of NEOC manning shortage at Module 1 start and language difficulties reading and responding to the initial

incoming injects), the Affected Nation answered many of the ECG questions as to how they would respond to the disaster and with whom they would coordinate to gain outside assistance, the actual official request for assistance and consequent offers (two of which were accepted) for this first event did not occur until rather late in the module. Offers of teams with boats, foam and satellite imagery were accepted by the Affected Nation.

The second major event which was the train explosion and release of toxic cloud received initial mitigation efforts by the Affected Nation, mostly damage assessments and hazard predictions. Neither notification nor request for assistance was sent out by the Affected Nation to the international community.

Participants later expressed concern about the number, frequency, timing and complexity of the injects and questions sent and the ECG took note (as elaborated upon in the TTX Mechanics section below). Language comprehension issues translate into a greater time requirement for participants to respond to injects and questions.

Recommendation 1: Future TTX MSELs should take into account language concerns as a time factor for comprehension and response turnaround, when producing scenario injects and determining the frequency of inject release.

Recommendation 2: All NEOCs need to ensure their full team is available for duty at the STARTEX, particularly the Host Nation (which in the BSI TTX series will be the Affected Nation) as other NEOC play often depends upon their initial actions and notifications to the international community.

b. Initiate processes to request imagery in support of oil spill and train car rocket fuel explosion mitigation.

Assessment: During Module 1, participants initiated processes to request satellite imagery and produce GIS products to support the mitigation of both the oil spill and train explosion major events. The Affected Nation sent out an official Request for Assistance to the international community (Black Sea nations, EADRCC, UNOCHA) which included a request for satellite imagery of the oil spill. Three participating nations coordinated to locate imagery to support this request, and one nation provided the Affected Nation with a map. The Affected Nation used GIS to produce a map of the oil spill area as well as a map of the train explosion damage assessment and a toxic cloud hazard prediction. The oil spill maps were shared with the EADRCC and UNOCHA. One assisting nation provided a GIS product indicating the number and location of available response assets for the oil spill.

Recommendation: Black Sea littoral nations should utilize their TTX information sharing experience in real-world application, particularly regional and international coordination to share satellite imagery to produce common GIS products to support disaster mitigation.

- c. Initiate measures to protect population, request regional/international assistance as needed, and inform public, to include Notifications, Requests for Assistance, and Situation Reports by national civil protection/emergency management authorities.**

1) National Level

Exchange information and situation reports for both incidents; determine chemical released, treat those immediately affected, and refer to plume models to determine direction of cloud; act accordingly to mitigate effects of plume and oil spill spread upon people and ports.

Assessment: The Affected Nation reported that it would exchange information and provide public information releases at the national level for both incidents, but as a Local Emergency Management Agency (LEMA) was not playing this was not demonstrated. Oil spill maps and plume models were produced and shared with the EADRCC and the UNOCHA. No situation reports were shared. The Affected Nation initiated requests for assistance with the oil spill and answered questions to the ECG about how they would initiate assistance requests for the train explosion (from OCHA and Red Cross) as well as how they would inform the home nations of affected tourists through their Foreign Affairs Ministry. The actual communications to do this were not undertaken. While it would have been possible to communicate with UNOCHA as they were participating in the TTX, neither the roles of the Red Cross or the Foreign Affairs Ministry were represented as players in this TTX and so could not receive such communications. This indicates the possible necessity of including more roles in the TTX, perhaps resident in the control group, such that the NEOCs can communicate directly with those role players to better illustrate how they would interact/communicate in an actual emergency.

Recommendation: Future BSI TTX should consider a role for other national players in the NEOCs such as representatives from the National Red Cross or Foreign Affairs Ministry to enable playing out of that coordination element in disaster response.

2) Regional/International Level

Notifications among affected nations for both incidents based on bilateral, regional, and international agreements/arrangements; act accordingly to initiate requests and offers of assistance to mitigate impact of oil spill and toxic plume spread.

Assessment: The Affected Nation notified the other nations of the oil spill incident, but did not get a chance to notify the nations who had injured and killed responders. The Affected Nation did initiate requests for assistance through regional and international agreements (mostly int'l) and received offers from its neighbors, two of which it accepted. The Affected Nation EOC and other participating NEOCs did not seem to be aware of existing regional and international maritime agreements such as one for mutual assistance for the spill of oil substances at sea. The Affected Nation did not get the opportunity to notify the other nations of the second major event regarding the train explosion as it occurred close to the end of the module and they were still responding to injects regarding the first major event.

Recommendation 1: The civil protection agencies of the littoral Black Sea nations should familiarize themselves with their national maritime counterparts as well as the existing regional and international agreements they are party to, such as those for mutual assistance for the spill of oil substances at sea.

Recommendation 2: When developing future BSI TTX scenarios on the littoral Black Sea, maritime elements from these nations should be including in the planning conferences (to brief the participants as well as provide feedback and input to scenario development) as well as be invited to observe the TTX.

d. Module 1 Overview of Play

During Module 1 of the Albatross TTX, two major events occurred: oil terminal explosion, fire, and spill into the harbor (1200 on February 13); and train derailment in Urekhi district causing a rocket fuel explosion resulting in a toxic cloud (1200 February 14). Fifteen of the 23 injects sent by the ECG were sent to the Affected Nation exclusively, containing 28 questions and 6 tasks for the Affected Nation's response. Of those 28 questions, the Affected Nation answered 14. Of the six tasks (public information release on the oil spill; GIS map of the oil slick and threatened coastal areas; drafting and submission of a request for assistance for train derailment and toxic cloud response; isolation zone estimate and downwind hazard GIS product for the toxic cloud; public information release on accident during course of oil spill and fire rescue affecting

national assistance providers; listing of measures taken by the EOC to mitigate the effects of a drifting toxic cloud), two were fulfilled: one GIS map was produced to identify the oil slick and threatened coastal areas (which the Affected Nation then sent to UN-OCHA and EADRCC), while two GIS maps were created to illustrate estimated damaged zone by the rocket fuel explosion and toxic cloud as well as the downwind hazard prediction. None of the public information tasks were completed and no request for assistance was issued on the rocket fuel explosion and toxic cloud.

Six injects were sent to all five participating nations (to include the Affected Nation), which contained nine questions and two tasks (one GIS production task (create a map of the oil slick) and one press release task). All nine of these questions received responses from the non-affected nations, with response rates varying from 75 to 100 percent. The GIS task was responded to with map production by two NEOCs (the Affected Nation and one of the other participating nations), a third nation noted that they were producing a data layer and map, but did not send this map during the course of the module. The map products were also sent forward by those participating nations to the EADRCC. Another participant nation sent an unsolicited GIS map, in response to one of the questions, illustrating their available first responder assets. Although the methodology for sending and vetting, as well as the content of a public information release is discussed, none of the nations sent one in response to this task.

1) Use of Standard Message Formats

Assessment: In terms of official communications using international standards and procedures (such as the EADRCC message formats), the Affected Nation sent out only one notification to the region (as well as to the EADRCC and UNOCHA) in EADRCC format on the oil terminal explosion, fire, and spill. Despite injects reflecting a dire situation, the request for assistance was not sent out by the Affected Nation until specific intervention by the ECG with an inject from the national authority directing the request. UNOCHA and EADRCC provided offers to help coordinate assistance requests and solicit situation reports. Three Black Sea nations responded with offers of assistance, while two sent out coordination messages to their neighbors on GIS data to support the response. The Affected Nation accepted two of the national offers of assistance.

The standard message formats were not always utilized by participants, and when used, they were not always filled out in a clear and concise manner, requiring further coordination. In some cases, misunderstandings on availability of assets led to delay in acceptance of offered assistance. There was confusion about the deployment timeline

versus the length of time an asset would be available for use, which slowed down acceptance of much needed assistance during this module.

Recommendation: NATO-EADRCC standard message formats should be utilized as much as possible to enable clear and consistent communication during emergencies, particularly in coordination with assistance offered or received from EAPC countries. Black Sea littoral states should ensure their Civil Protection NEOC personnel (including the ones who participate in exercises) have familiarity with these formats and utilize them during TTX when appropriate, taking care to clearly fill out the forms and provide the appropriate amount of detail.

2) Regional/International Coordination and Requests/Offers of Assistance

a) Oil Terminal Fire and Spill

In terms of actions taken to mitigate the oil terminal disaster, the Affected Nation sent out one notification of the oil terminal explosion and fire to Black Sea nations and the EADRCC one hour after receiving an inject with instruction from their PM to notify the international community. While the Affected Nation answered many of the questions about how they would coordinate internally and contact and coordinate with the international community for this first major event, an official request for assistance was not sent out until prompting by the ECG much later in the module (one hour after the inject instructions from the national authority telling the NEOC to request assistance).

After participants learned of the first event via a press inject, and then the EADRCC notification to all BSI nations, they were asked questions by the ECG about whether they would offer assistance and how they might prepare and coordinate to do so. Most participants noted that they would offer await an official request before sending an offer while some noted that they might undertake follow-up coordination communications between intelligence services as well as civil protection POCs in the littoral region. Only one nation suggested they would prepare for and consider the feasibility of offering assistance prior to receipt of an official request for assistance. That same nation sent an official offer of assistance to the Affected Nation in advance of a request.

In terms of what assets nations might offer to international agencies for response, nations included teams of specialists as well as oil cleaning boats, special foam, satellite imagery, and humanitarian assistance. In terms of which international organizations the participants would work with or offer their assets through for this response (other than

EADRCC), they noted UN-OCHA, EU-MIC, and International Red Cross. One press release was produced by a participant after receiving the initial oil spill notification from EADRCC.

Once the official request for assistance went out, two additional nations offered assistance (to include booms and skimmers as well as foam), one offered to coordinate GIS data, and the first nation to offer boat assistance also offered to share satellite images of the area. The Affected Nation accepted the boats from the first offer, however there was confusion on the requirements as the Affected Nation did not specify needs initially in the official Request for Assistance and there was further confusion regarding the time element included in two different national offers. The Affected Nation was not able to differentiate between what was intended to reflect time needed to deploy the assets versus entries indicating the length of time the assets might be available for use. It appeared that language barriers and a lack of familiarity with the EADRCC standard formats played a factor in this misunderstanding. This was clarified during the Hot Wash discussion for Module 2 and participant were urged to fill out the standard forms consistently and fully in as clear a manner as possible. A follow-on request of additional needs for fighting the fire and cleaning the oil spill was sent out by the ECG (on behalf of the Affected Nation), but there was no response by participants.

b) Train Car Rocket Fuel Explosion with Toxic Cloud

The second major event, the train derailment and explosion/toxic cloud, was not reported further by the Affected Nation to other BSI nations, they primarily answered the ECG questions and produced two GIS products with initial estimates of the possible damage zone for the released chemical from the explosion to the ECG. They did note that they would request assistance from UNOCHA and Red Cross and would inform home nations of affected tourists through their foreign affairs ministry, but they did not actually take action to undertake these communications.

UNOCHA offered to provide a United Nations Disaster Assessment and Coordination (UNDAC) team, and an inject was sent from the Affected Nation's national authority to the EOC suggesting the need for further assistance to control the oil terminal tank farm fire, but no further responses or actions were undertaken during this module by the Affected Nation NEOC.

The news injected of national contingent injuries and fatalities impacting two assisting nations responding to the oil spill and fire yielded a response from one of those assisting nations as to what measures their NEOC would take to facilitate care and

transport of the injured, and what information they would release to the public on the accident.

Further injects regarding the accident affected international team members: a status update to the Affected Nation NEOC on the dimethylhydrazine train accident and toxic cloud by the LEMA, which suggested requesting treatment advice from other Black Sea nations; and a scenario update regarding possible future terrorist attacks with chemical weapons in a western region of the Affected Nation, which yielded no responses from participants.

3) TTX Mechanics Issues

As indicated above, the first module of the TTX began slowly. The initial set of injects on the first major scenario event, the oil terminal explosion and oil spill, were sent to the Affected Nation only in order to overload their NEOC and force them to notify and request assistance from the international community (here intended to mean their neighboring countries as well as international organizations). This notification would provide the basis and justification for the other Black Sea nations to stand up their NEOCs as well as for bringing in the international community to assist with mitigation and consequence management for this event. The lack of proper manning of the Affected Nation's NEOC meant that they were not able to respond or act in a timely fashion, thus delaying the initiation of play for most players (the other four NEOCs), and pushing back the MSEL inject timeline significantly. Furthermore, the Affected Nation EOC got very bogged down in trying to answer the follow-on questions contained in the injects from the ECG, at times at the expense of taking the required actions prompted by the event description portion of the inject.

The ECG sought to mitigate this delay in play circumstance in a few ways: by sending up a controller to prompt the Affected Nation EOC to send out a notification; by creating a new inject to stimulate play of the other NEOCs; and by sending a specific press inject to the other NEOCs reporting that the oil spill had the potential to threaten their ports, in an attempt to solicit the other NEOCs to offer assistance to the Affected Nation or at least interact and request more information on the situation. The Affected Nation controller, who was the only playing participant with real NEOC experience, left the ECG and joined the NEOC for the remainder of TTX play. The Affected Nation team then split to have one group working on actions in response to events and another group working on responses to the inject questions and tasks. They also employed the assistance of an interpreter to read and type the responses.

The level of English language skills with several participating nations was such that they both required full-time interpretation/translation assistance. One participating nation did not have NEOC participants who were able to write in English, so their assigned interpreter ended up reading off and translating all of the MSEL events and questions and typing in all of the responses.

The ECG further adjusted play to the circumstances by cutting back on the timing of MSEL distribution to players. Originally planned for sending one inject every 7 minutes, the ECG waited for players to catch up to the responses before sending additional injects, modifying the injects by deleting some of the questions, and in some circumstances skipping over some injects. Out of 36 injects planned for Module 1, only 19 were sent. The oil terminal explosion, fire, and spill made up the largest portion of play. The train derailment, rocket fuel explosion, and toxic cloud event was injected late in Module 1, so did not receive much play. It should be noted that it is not uncommon for more injects to be developed than played over the course of an exercise, and as had been pointed out to the host nation, the inclusion of three major events was viewed as excessively ambitious.

2. Module 2

Objectives – Steps to mitigate effects of possible chemical WMD exposure as well as oil spill and train explosion.

a. Employ national and international capabilities (medical and non-medical) and consequence management procedures to mitigate the possible chemical WMD exposure.

Assessment: This objective was not addressed during this module as the initial reports on the possibility of a chemical WMD release did not occur until later in the module, with actual release occurring in Module 3. While initially planned for this module, the chemical WMD release was pushed back to Module 3 due to a combination of factors to include slow response rates during Module 1 which caused a push back of a significant number of Mod 1 injects to Module 2, as well as the cutting short of Module 2 to allow for a participant presentation.

Recommendation: N/A. See Module 3 for evaluation and recommendations related to this objective.

b. Continue to mitigate effects of the oil spill as well as the train explosion emergency

Assessment: Given the challenges experienced by participants during the first module, the ECG refrained from sending injects on oil spill mitigation during this module and instead focused primarily on the train explosion emergency, beginning with an inject reporting an official request for assistance by the Affected Nation for this emergency (since no request was sent out in response to injects to the Affected Nation on the topic during Mod 1). Actions taken during this module to mitigate the train explosion emergency consisted of provision of international assistance to include advice on treating train explosion and chemical exposure casualties, safe disposal and area clean up. UNOCHA offered an UNDAC to the Affected Nation, which was declined. The Affected Nation responded instead to UNOCHA with a specific request for first aid medicine, tents, and food. The Affected Nation also produced GIS map with locations of hospitals and clinics for evacuation and medical treatment

In response to the overloading of the Affected Nation's health care system with those affected by the train explosion and toxic cloud incident, the Affected Nation noted that it would request medicine and field hospitals from neighbouring nations. An actual request for field hospitals did not go out until just after the module ended, UNOCHA offered to send out an MCDA request, one nation offered assistance and the EADRCC also offered to send out a request to EAPC countries. A situation update to other EAPC nations was not sent out despite EADRCC suggestion that the Affected Nation do so.

The Affected Nation also noted that they would mobilize volunteer teams to provide psychological treatment of the population and that their course of action would include having local organizations conducting an evaluation of the population from the northern area where the exposure occurred toward the center of the country, furthermore they announced plans to request supply of field hospitals and medicine from neighbouring countries to relieve the pressure on overloaded hospitals.

One neighbouring nation received an inject from the ECG with press reports detailing foreign nationals possibly affected by the toxic cloud. This prompted the nation to request information from the Affected Nation on the status of their nationals and initiated coordination and communication channels between these two nations.

While the Affected Nation coordinated with other nations, neighbouring nations generally didn't exchange enough information to coordinate their provision of assistance.

Recommendation 1: Affected Nations should provide frequent and clearly articulated situation reports to the international assistance community (including EADRCC and UNOCHA) to ensure transparency and effective provision of appropriate assistance in a timely and coordinated manner.

Recommendation 2: Regional assistance providers neighbouring an Affected Nation should make efforts to improve their coordination and communication with one another prior to an actual disaster.

- c. Initiate Public Information programs on all events for region and for international audience to include neighbouring nations, as well as home countries of the foreign tourists in affected areas. Assuage concerns about terrorist actions.**

Assessment: Public information programs were initiated during this module by the Affected Nation as well as the neighbouring assisting nations (including the home countries of foreign tourists in the affected areas), for the national, regional and international audiences. The Affected Nation discussed production of a special press release to inform the public (the population as well as tourists) about the incident to include warnings on the toxic cloud, the nature of the release and what to do in case of exposure. Two participating NEOCs drafted statements for their national press detailing what assistance they would provide as well as what the risks and impact might be of this disaster. The Affected Nation noted it would respond to press reports about affected foreign nationals by provision of details of measures taken to those nations through their Foreign Ministry, they did not initiate actual coordination or produce a press release. Despite an inject requesting it, the Affected Nation did not produce a public information strategy on the medical situation.

Recommendation 1: BSI nations should review their public information strategies for disaster response situations and develop such strategies if they do not already exist. NATO's 'Budapest Guidelines' could provide a potential reference for public information management in crisis situations.

Recommendation 2: Future BSI TTX events should continue to include orientation activities as well exercises which support development of the littoral nations' public information capacities for disaster response scenarios. NATO's "Budapest Guidelines" could provide a potential reference for public information management in crisis situations.

d. Module 2 Overview of Play

During Module 2 of the Albatross TTX, the mitigation of two major events from Module 1 continued, with an official Request for Assistance to respond to the train explosion and toxic cloud event going out to participants from the Affected Nation (via the starting inject). Reference to a possible third major event, terrorist release of Chemical WMD agent, occurred late in the module with injects on this being sent to the Affected Nation only. There was no reaction or response by the Affected Nation on this topic until Module 3.

The Affected Nation exclusively received six of the 12 injects sent by the Exercise Control Group (ECG), containing 11 questions and six tasks for the Affected Nation's response. Of those 11 questions, the Affected Nation answered six. The following six tasks were injected:

- Public information release on nature of toxic cloud, signs and symptoms in case of exposure and what measures to take
- GIS map of evacuation shelters and medical treatment facilities for distribution to public in response to the toxic cloud
- Draft a course of action for releasing pressure on the overloaded health care system
- Develop a public information strategy regarding overloaded health care system and medical treatment of casualties
- Request GIS map from neighboring nations with hospital locations and capacities to treat burn patients, chemical exposure
- Produce press release for population and home countries of affected tourists from Black Sea which reassures the public.

Of the previous six, the following four were fulfilled:

- Public information warning message on toxic cloud release
- GIS map with calculation and allocation of hospitals and clinics
- A suggested course of action for releasing pressure on the health care system (request field hospitals and medications from neighboring countries)
- A GIS map with available hospital beds in the Affected Nation (note: the task sought GIS map of available beds in neighboring countries not of the Affected Nation).

Neither a public information strategy on the medical situation nor a press release to the population or home countries of affected tourists was produced by the Affected Nation.

All six participating NEOCs (including the Affected Nation) received the other six injects which contained 10 questions and three tasks. The assisting nations experienced a range of response rates to the questions (30 to 80 percent response rate). Only one NEOC, the Affected Nation, responded to the first task, with a specification of measures taken by an EOC to mitigate the effects of a toxic cloud (another NEOC responded to this task with a note that there was no threat to their population). The second task to produce a press release on the train explosion and toxic cloud incident received two responses (two press releases) by two assisting nations. The third task to produce a statement to the national press on the type of assistance providers were sending to the Affected Nation for the train explosion and toxic cloud incident, was responded to by two assisting nations (different nations than those who responded to the second task).

1) Use of Standard Message Format/Response, Coordination and Offers of Assistance

In terms of official communications using international standards and procedures (such as the EADRCC message formats), two official Requests for Assistance were sent out. One was sent to all participants implied per the first inject of the module; the second was sent in EADRCC format by the Affected Nation shortly after the end of the module. The first request for expert advice on treatment of exposed casualties, safe disposal of the substance and clean-up operations after the release of Dimethylhydrazine received an immediate offer of assistance from one neighboring nation. Two other neighboring nations indicated in press releases to their publics that they had decided to offer assistance but did not send official offers during this module. The Affected Nation's second official request for assistance to respond to the train explosion and toxic cloud and resulting overloading of the health care system field hospitals received an offer from the same nation which provided the initial offer at the beginning of the module. The EADRCC offered to send the request for field hospitals out to the EAPC community (note: EADRCC did not acknowledge the existing field hospital offer by a neighboring nation) while the UNOCHA offered to send out an MCDA request.

2) TTX Mechanics Issues

Module 2 play went much more smoothly than Module 1 due to a variety of reasons. The players better understood what was expected and were in the flow of things. Additionally, the ECG paced the injects, giving more time between them and keeping on top of the injects, by sending out controllers to observe play and ensure all players were engaged by redirecting injects accordingly. Module 2 started with a scene setter inject sent to all, informing them of the train derailment, explosion, and release of a toxic cloud, that tourists were endangered (some from their nations), and that the Affected Nation had sent an official request for assistance to help contain and mitigate the circumstances. The intent of this message was to get all participants playing right away, through their offers of assistance and initiation of coordination. The ECG then commenced with inject 21 from Module 1. The ECG was able to complete the remaining Module 1 injects (skipping over a few and deleting some of the accompanying questions and tasks), and a total of 12 injects were sent to players during this module. This Module play engaged the initial response and mitigation of the train derailment and toxic cloud spread (assistance offers, provision of hazard mapping for the toxic cloud, issue of foreign tourists), as well as the initial reports of suspected chemical WMD release.

3. Module 3

Objectives – Employ national and international capabilities (medical and non-medical) and consequence management capabilities to contain and begin recovery from the emergency.

a. Initiate coordination of all incoming international support to contain the incidents.

Assessment: Given the slower progression of injects in earlier event modules (1 and 2), this module did not address containment but rather mitigation and response related activity; mostly requests and offers of assistance with international organizations offering to coordinate further requests.

This Module did include the initiation of the coordination of in-coming international support for mitigation, to include field hospital and medicines to respond to the impact of an overstressed healthcare system which occurred late in Module 2 due to the train derailment and toxic cloud incident. EADRCC assisted the host nation with coordinating the receipt of appropriate support. Four nations offer support for this, the Affected Nation accepted only two nations' offers for medicines and gas masks.

The Host Nation's discovery of the suspected release of the chemical weapons agent Sarin, information injected from its LEMA about the requirement for treatment and decontamination, as well as incoming reports of casualty numbers, led them to request assistance from the international community (to include OPCW, EADRCC, UNOCHA and all BSI nations) under Article X of the Chemical Weapons Convention (CWC).

As a result of both the toxic cloud release and the park attack, Foreign Nationals attending an international conference in the port city were forced to evacuate and were without shelter. The affected nation coordinated requests of incoming assistance from Black Sea Nations, with the help of the EADRCC, in order to address the need for evacuation and shelter as well as other appropriate medicines and field hospitals.

Recommendation 1: Black Sea nations should apply lessons learned from the Albatross TTX experience regarding requesting and coordinating international assistance to mitigate the effects of stressed healthcare systems to future real world scenarios.

Recommendation 2: Future BSI TTX scenarios should continue to include MSELs which exercise coordination of international assistance for containment of disasters.

b. Initiate appropriate recovery measures for areas where incidents have been contained.

Assessment: Recovery measures for the area turned out to be less a focus of this module due to circumstances noted above. Certain recovery elements which were initiated included international coordination for provision of shelter and medicines (for evacuated individuals in the path of the train explosion's toxic cloud, as well as those areas possibly impacted by Sarin release) as well as initiation of emotional recovery assistance, primarily psychological support to meet the needs of some of the responders. Additionally repatriation of injured nationals was brought up and three nations made efforts to coordinate their evacuation, one with more detail than the others. The module was critiqued by participants during the Hot Wash who suggested inadequate attention was given to Humanitarian Assistance and Recovery Teams and suggested an important area which needed focused attention was coordination of recovery assistance to include placement, stationing of teams as well as coordination of their arrival.

Recommendation: Future BSI TTX should be designed to incorporate international recovery assistance to include placement and location of teams as well as coordination of arrival.

c. Ensure Public Information programs continue to advise populations on the impact and status of all three major incidents.

Assessment: Public Information programs did continue during this module although not to the same extent as in the first two modules. This was partly due to the shifting of injects and module play as explained above. There were only two injects specifically requesting public information statements in Module 3, one regarding responder casualties (directed at two NEOCs whose countrymen were affected), and one to all players sent near the end of the module from their National Authorities, requesting a public release to share the news of the apprehension of all terrorist cells and gratitude by the Host Nation for the assistance received. There was a press statement developed by one country regarding their responder casualties. None of the nations developed the final public release at the end of the module.

Recommendation: Future TTX should integrate more public information injects throughout the modules to stimulate information sharing with populations on the impact and status of disaster response, containment and recovery assistance.

d. Module 3 Overview of Play

Module 3 of the Albatross TTX, dealt with the mitigation and containment of three major events: oil spill and oil terminal fire; train derailment and toxic cloud; and chemical WMD agent release. The third major event occurs during this module, although a reference to its possibility occurs in an inject sent to the Affected Nation late in Module 2.

The Affected Nation received a total 11 of the 15 injects sent by the Exercise Control Group (ECG), six of which they receive exclusively. These six contain eight questions and nine tasks, to all (except for one task) of which they respond. The nine injected tasks included:

- Creation of a downwind hazard prediction map for possible release sites of chemical weapons agents
- GIS map with possible release sites, chemicals stored and number of population possibly endangered by release using the hazard prediction from the previous task
- Define signs and symptoms of exposure of chemical agents such as Sarin, Mustard, Lewisite and Chloropicrin as well as treatment for each agent, in an information paper for LEMA and first responders

- Assessment regarding probably location where CW could be used in Affected Nation city and downwind hazard predictions for three Chemical Weapons Agents (CWA)s
- Create a GIS map indicating possible direction of chemical weapons agent plume, location of nearby hospitals, emergency services and other relevant data
- Produce downwind hazard prediction map for agents believed to be used (no response, they already respond in an earlier task)
- Produce a downwind hazard prediction map for Sarin agent
- Determine whether the offer of medical supplies from a neighboring nation will be accepted
- Develop a response and conduct appropriate coordination to receive medical supplied from offering nation.

All five assisting NEOCs received seven injects (Affected Nation also receives five of these), with 11 questions and five tasks. There was one inject with two questions and one task sent specifically to two nations who had national contingent casualties (one nation responded to both the questions and the tasks) and there was one inject which had one question and one task sent to one assisting nation regarding a civilian evacuation of their nationals from the Affected Nation. This nation responded to both parts of the inject. The broader set of 11 questions sent to all assisting NEOCs had four of those questions with 80 percent response, six with 40 percent response rate and one with 20 percent.

1) Response to Deliberate Release of Toxic Industrial Chemicals (TICS) or Chemical Weapons Agents

The scenario update to all noted that the fire and oil spill had not been contained yet and that emergency response assets had been stressed by the two incidents (including the train car explosion toxic cloud) as well as the possible discovery of CW agents in Batumi.

a) Public Information on Chemical Weapons Agent Release

When asked how they would inform their LEMA and public, Affected Nation NEOC noted that its Emergency Management Center would develop an information paper with possible follow up actions based on information from the National Anti-Terrorist Center about the possible release of Toxic Industrial Chemicals (TICS) or CWs by terrorists in outdoor public locations in Batumi. The Affected Nation also produced a

GIS map which indicates possible chemical release sites based on hazard predictions and the number of population possibly endangered.

b) National Procedures and Agencies Involved in Response

All of the BSI nations receive an inject from their National Anti-Terrorist Centers which convey that Affected Nation's National Security Services have informed them of a CW/TIC terrorism threat, noting possible agents include Sarin, Mustard, Lewisite and Chloropicrin. The NEOCS are ordered to check their procedures regarding CW use. All nations report that at a minimum their Departments of Health, Interior and Defense would be involved in response actions. Most reported that their Ministry of Foreign Affairs would be involved; some include their anti-terrorist centers and security/intelligence services; while others also included Ministry of Environment, Ministries of Economics and Energy, as well as Coast Guard and Customs.

c) Travel and Transport/Border Crossing Issues

Countries noted several air travel and border crossing issues which would need to be addressed in this incident to include increased security measures at airports, ports, and cross-border checkpoints.

d) Medical Information to Identify Released Agents

All of the participating nations responded to the injected request for information on the signs and symptoms of exposure to the three suspected released agents in an information paper which could be distributed to their LEMAs. The nature of the response varied with one nation copying data from the U.S. CDC webpage on Nerve Agents; one nation providing a thorough answer addressing each of the three suspected agents, and one country noting that it will be on standby.

e) GIS Mapping of Medical Information to Support Strategic Decision-making

Only one country produced a map of pertinent medical information to inform strategic decision making, sending one with national hospitals locations and capacity.

f) Identification of the Released Agent

The Affected Nation identified the likely agent released to be Sarin based upon the inject containing the symptoms of victims, and provided a command and control structure for handling the incident (copied from the Albatross Exercise Guide) as well as

a GIS map with plume direction, location of hospitals and other relevant data regarding the event.

g) Treatment and Decontamination for CWA Sarin Exposure

When the Affected Nation received information on the requirement for treatment and decontamination for Sarin exposure as well as the fact that 40 persons were in serious condition with another 100 needing treatment; they sent out a request for assistance to the OPCW, EADRCC, UNOCHA and all BSI nations under Article X of the CWC (regarding suspected Sarin release and assistance for decontamination and treatment). They also attached a downwind hazard map to that request (using data from plume modeling supported by U.S. State of Georgia's National Guard hazard mapping software).

h) OPCW Assistance Issues

With regard to OPCW request for assistance, neighboring NEOCs to the Affected Nation were asked to convey how they would react at the national level once such a request was received. Nations discussed the ministries involved, noting they would have to survey internal resources. One nation noted that it has committed gas masks to the OPCW for their list of available response assets. In response to the task inject for BSI nations to offer assistance to the Affected Nation, one country indicated that they would do so (but did not); one nation sent coordination messages to two of its neighboring littoral nations to see if they were offering assistance. A third offered Sarin treatments, field hospitals, equipment and personnel for decontamination as well as evacuation of any affected nationals.

i) OPCW Coordination for Verification and Investigation

Following situation report by the Affected Nation on the CW release containment; OPCW offered to send an investigation team from the technical secretariat. The team was accepted and dispatched. The Affected Nation noted that their Ministry of Internal Affairs would be the appropriate liaison point. The OPCW noted that the Ministry of Foreign Affairs is typically their national POC and liaison point, but as the MFA is assigned national authority, they may also designate that authority to any other national agency as they deem appropriate.

2) Evacuation of Responder Casualties

Two responding nations were informed that their national teams had suffered casualties during response to the train derailment and toxic cloud incident (each team had one killed, and another severely injured and being treated in the hospital) and that the Affected Nation required instructions on how to handle them. One nation noted that would arrange transportation and provided a public release on the incident. The other nation did not respond.

3) Assistance for Foreign National Casualties

The toxic cloud release and park attack led to evacuations in Batumi, impacting foreign nationals attending an international conference who were consequently without shelter. BSI nations were told that relatives of the conference attendees were contacting governments to see what they are doing about evacuation and shelter assistance. One NEOC responded that they would provide tents, water, medicine and decontamination supplies as well as offer charter flights to evacuate their nationals. Another NEOC noted this issue would be coordinated through their MFA. A third nation offered supplies and transport of supplies to the Affected Nation by C-130. The EADRCC helped to coordinate this offer which the Affected Nation accepted. A neighboring nation's assistance offer for gas masks and Atropine was accepted by the Affected Nation. An offer which followed from another neighbor for field hospitals, Atropine and Pralidoxime Chloride received no response by the Affected Nation.

4) Evacuation of Injured Nationals

Injured civilian foreign nationals approached the Affected Nation government and requested assistance in returning home; as a consequence the Affected Nation government asked that country's NEOC for assistance in evacuating of its citizens which they agree to do. The Affected Nation coordinates with the NEOC of the injured nationals, the NEOC agreed to send a C-130 to evacuate, and the Affected Nation transported the national to evacuation airports for pick up. The Affected Nation granted the requested authorization for the foreign C-130 to enter airspace as well as permission to land at the airport.

5) Psychological Support for Responders

The final inject on psychological support relayed that national contingent members engaged in the response display critical incident stress, participants were asked

how they would respond to and treat this occurrence. One nation noted they would involve the Red Cross to assist, another nation noted they have pharmaceutical drugs they would use, another nation suggested they would either bring people home to treat in a Sanatorium, and/or have their psychologist who were deployed as part of the response team treat them in the field; another nation noted that a stress debriefing would be organized and that they would transport their team member to it the following morning.

6) TTX Mechanics Issues

Module 3 play was originally envisioned as focusing on recovery and rehabilitation stages of consequence management, dealing with the mitigation and containment of the oil spill and oil terminal fire, the response and containment to the train derailment, and mitigation of the toxic cloud impact, and finally response, containment and mitigation of the chemical weapons release. Given the circumstances described above this module dealt sparingly with the recovery and rehabilitation stages. This module used injects contained in the original Module 2 with some manipulation of the order of injects to adapt to the circumstances described above and ensure maximum engagement of all participants. Additionally, several new injects were drafted to stimulate play. Approximately 14 injects were sent during this module.

C. EVALUATION OF FUNCTIONAL ASPECTS

During the exercise, an AAR officer focused on each of the following functional issues: Standards and Procedures, International/Interagency Coordination, Geographical Information Systems, and Public Information. They observed the interactions and message traffic between each of the NEOCS and monitored NEOC responses to Exercise Control Group exercise questions. These officers shared their exercise observations through the Hot Wash briefs given after each module that noted things that should be sustained and those that should be improved. The summary of those comments is below. A paper containing more detailed conclusions from the GIS facilitator is included in the appendix.

1. Standards and Procedures

Sustain

1. Use standard message formats to facilitate rapid response.
2. Open process at national level to ensure necessary input from required agencies.

3. Share information and coordination with neighbors and international agencies.

Improve

1. Unformatted responses (the formats were still often confused and mislabeled).
2. Communication with local authorities and medical authorities will provide information critical for public information programs to allay citizen hysteria.
3. Coordination with OPCW, UN-OCHA, EADRCC, and other International Organizations will support the response capabilities by providing additional assets and mechanisms for coordination and resolution of the crisis.

2. Geographical Information Systems

Sustain

1. GIS expertise is strong amongst all participants.
2. International cooperation was attained through GIS tasks assigned.
3. GIS skills taught in training were used effectively during the exercise.

Improve

1. Familiarity with ArcGIS 9.x software needs to improve.
2. There still needs to be a better understanding of GIS roles and the support BSI nations can provide each other.
3. Future TTX should integrate concepts which promote regional GIS coordination.

3. Media/Public Information

Sustain

1. Continue encouraging repeated participation of delegates, as this helps all of U.S. to better learn and apply knowledge.
2. Continue media training program, as this appears to meet the delegates' needs. Delegates were quick to understand and implement proposed strategies/techniques.
3. Continue to facilitate an open dialogue, as all parties were able to learn from each other.

4. A visible momentum is present. Delegates were engaged in interviews as well as in coordinating and sending responses to media queries.

Improve

1. Encourage each delegation to assign a public information specialist to the communications protocol working group. This will aid in the development of a regional response plan within the public information arena.

D. NATIONAL EVALUATIONS

Based upon the AAR reports given by participants on the last day of the exercise drawn from Hot Wash inputs after exercise module play; the following points summarize the issues that National delegates suggested should be either sustained or improved.

1. Sustain Summary

1. Organization of the communications network and the provision of technical support.
2. The PIMS/CMEP portal and message tool made the exercise easier and interesting.
3. GIS usage was consistent with the scenario, which supported the assessment and management procedures of the NEOCs.
4. The Exercise Guide and reference documentation prepared by the working groups was useful and applicable to the scenario.
5. Media/public information injects and activities were well organized, accurate, and developed consistently with the scenario and in support of the TTX objectives.
6. The complex scenario is realistic and provided interesting situations for the players to engage.
7. There was progressive improvement of scenario development and module play from the first to the third modules.
8. The preparation of documentation and the information exchange using standard procedures was conducted successfully.
9. Involvement of International Organizations in the exercise made for more realistic TTX play.
10. There was good communication and collaboration between NEOCs.

11. Every participant of the exercise, including OPCW, EADRCC, and UN OCHA, actively cooperated with the EOCs to resolve issues and mitigate the disasters.
12. The TTX event was well organized, providing good conditions for the work of the Steering Working Group.
13. A specific note of praise was indicated for the availability of Hazard Assessment software support provided by the U.S. State of Georgia National Guard.

2. Summary of Challenges/Things to Improve

a. Message formats

1. One nation suggested that the formats used needed corrections in accordance with the standard operating procedures of EADRCC and the CMEP-South East Europe (SEE) Handbook;
2. It was also suggested that participants need to remember to indicate the operational time in accordance with the MSEL injects
3. One nation suggested that the role of numbering the messages with type, country, and number is not very applicable in real-world emergencies;
4. Another indicated that the role of the coordination message isn't entirely clear.

b. MSEL Injects

1. it was suggested that a more precise time scale (real to operational) be developed for future TTX events;
2. Additionally, it was noted that in some cases it was not clear to whom the players should send the real messages, and some of the questions were not clear enough.
3. Several nations commented that more time was spent answering ECG inject questions than working like an EOC (exchanging messages to request assistance) during the TTX; these few nations suggested that in the future the TTX structure should have more direct communications and connections between NEOCs than between ECG and NEOC.

c. NEOC Computer Set-Up

1. To facilitate more efficient response and flow of information, one nation suggested that more computers should be provided to each of the NEOCs.

2. One nation suggested that in terms of information sharing and distribution during the TTX, a shared network folder should be used rather than sending attachments back and forth to one another.

d. TTX Module Design

One nation suggested that any future TTX have one discreet event per module, as this TTX was difficult with the requirement to continue to respond to events that started in Modules 1 and 2 during Module 3.

e. Future Scenario Aspects and TTX Participants

In terms of future aspects to include, it was suggested to build the activities of NGOs into the scenarios of future exercises as well as to invite and include both national/local Red Cross and the IFRC.

f. Hot Wash

Several nations noted that not enough time was allocated for Hot Wash preparation.

E. TTX OBSERVER COMMENTS

The **IFRC** representative spoke up at the end of this session, indicating that he was disappointed that the Red Cross did not get more play in this scenario and was sorry that the Georgian Red Cross representative was not present. He emphasized the important role of the national Red Cross organizations as conduits to the larger IFRC and recommended that they be included in future TTXs. The IFRC representative noted that currently they are trying to help build the capacity of local Red Cross societies and noted that Turkey was one of the strongest members, with excellent capacities.

The **Georgian** senior exercise director responded that they too wished to have better Georgian Red Cross participation in events and noted that they had been invited to participate but that unfortunately the relationship between the local Red Cross and the Georgian Government is practically non-existent. The Georgian Red Cross does exist, but it is not used as much as it should be by the government. It exists on paper more than it does in practice, and the national committee really needs to start working to build up the capacities of their Red Cross. The director noted that he will strive to invite both the national and international Red Cross representatives to future events.

Azerbaijan's representative expressed gratitude for being included as an observer during Albatross 2007 and noted that this exercise was an excellent step forward in improving the consequence management responses. The representative complimented the interaction between the NEOCs and with the IOs in the Control Group and emphasized the importance of information exchange in order to achieve the best response. He noted that the notification messages could have included more information. He complimented the choice of an oil spill event in the scenario, noting that it was quite realistic.

The **OPCW** representative expressed gratitude for inclusion in this event and noted that this TTX series provided a good opportunity to promote and educate about international assistance, which addressed different target audiences. The TTX scenario aspects that modeled the release of chemicals allowed for a demonstration of the high complexity of activities required to respond. The coordination and engagement with international organizations put this TTX at the international level of response.

The **Asian Disaster Reduction Center (ADRC)** representative noted that he observed good cooperation during the TTX. He added that at the national level, the role of the media during emergencies is very important and must be taken into account. This TTX should remind participants to go back to their home nations and establish efforts to work more effectively with the media and to establish more effective local community relationships.

The representative from Turkey noted that TTXs are more effective than Field Exercises for learning how to establish crisis management. The exchange of information is one of the most important things to do in a crisis. There are many small nations in this region, and so any large industrial, political event or disaster in one always affects others. There is a need to be able to exercise to prepare to respond to disasters. There are no natural borders to technology or knowledge; we must share it. This exercise shows how to share responsibility, which is one of the biggest benefits of coordination.

Croatia expressed thanks and noted that they will be hosting a Field and Table Top Exercise in 2007 in coordination with EADRCC focusing on protection of critical infrastructure, in which Georgia will participate and to which other BSI countries are invited.

F. EVALUATION OF ADMINISTRATIVE ASPECTS: MECHANICS OF EXERCISE DEVELOPMENT AND EXECUTION

This section reviews and evaluates the mechanics of exercise development and execution for Albatross 2007, from the initial planning meetings on through to the TTX event.

1. Exercise Development

a. Host/Sponsor Arrangements

There was a lack of clarity in the host/sponsor arrangements in terms of the responsibilities of the host nation in supporting the event. Communications prior to the TTX were spotty and the host was not responsive to coordination attempts by the sponsor and the TTX support team. Basic administrative setup and event support responsibilities were not established adequately prior to event start. The host's administrative support team did not arrive until quite late, rather close to event start, allowing for inadequate on-site coordination prior to event start. Despite repeated requests for this information by the sponsor's exercise development team, the host did not clearly assign roles to all of its own national participants for the event, leading to confusion during the TTX within the host team as well as within the sponsor's TTX support team.

The lack of full-time host counterparts assigned to the ECG and Media/Public Information Working Group were the most obvious omissions, which forced the sponsor's exercise support team to take on the host's responsibilities during the TTX. One key impact of this was that the sponsor's Exercise Support Team took over the TTX Hot Wash process at the beginning of the event in the absence of an assigned host counterpart to run it. The optics of this presentation, which noticeably lacked host nation participation, caused discomfort on the part of the host's senior leadership and subsequently did lead them to officially assign personnel to take on the lead role in facilitating and running the Hot Wash sessions for the remainder of the event. The host facilitator, once identified and assigned to this task by his leadership, did an excellent job in this role.

Recommendation: Develop a clearly identified set of guidelines for hosting a TTX (which delineates host and sponsor responsibilities) to be discussed and agreed upon between sponsor and host prior to initiating the planning process for the next BSI TTX. These guidelines should include identification of working-level contacts for development of the exercise as well as key focal points for the event execution (to include the areas of

administrative support, exercise control, Hot Wash facilitation, and media/public information focal point).

b. Scenario Complexity

The TTX scenario for Albatross was quite complex with three major events occurring rather simultaneously, each with its own complex set of response and mitigation needs. Exercise Developers had recommended a more streamlined scenario with fewer major events, but were over-ruled by the Host Nation. As noted in the Module play evaluation section above the players had a difficult time keeping up with the pace of injects during the TTX and so the ECG slowed down play and shifted the module activities such that it was a more manageable pace to allow for reaction and response. Because of this, the TTX did not get into the amount of desired depth on the coordination aspects in response to each of the major events, and also was not able to adequately test the containment and recovery phases. Had there been fewer major events exercised simultaneously, there would have been more of an opportunity to test capacities to address a disaster, coordinating regional and international assistance from beginning to end in more detail and depth.

Recommendation: Future BSI TTX should employ a basic scenario with one major event, which can be developed in a way that can engage all TTX players (such that it stimulates the stand up of their NEOCs) and that stimulates regional and international coordination to respond to and mitigate the effects of the disaster.

c. Public Information Activities

It was clear that the public information aspect of the TTX did not receive adequate attention in the development and planning of the Albatross TTX. There was not sufficient planning time to allow for more cross-fertilization of public information facilitators and working groups members with the scenario development group. There was insufficient space and agenda time allocated for this group during the actual TTX.

Recommendation: If Public Information is to be an objective and a priority for future TTX events, this aspect should be better streamlined into the planning, development, and execution of the event. This requires attention of the planners, sponsors, and host. There needs to be more interaction between this group and the scenario development group during the Initial and Main Planning Conferences, and clear leadership support needs to be conveyed for the role and priorities of Media and Public Information in this series. Attention should be given to cultivating appropriate

participants (through the invitation and registration process). Event administrative coordinators and planners need to allocate appropriate meeting space and sufficient time on the agenda for this group during the planning and execution stages.

d. Identification of Registered Participants

The TTX facilitators did not all receive a participants list ahead of time of planning meetings or the actual TTX to clearly identify the respective roles of the personnel being sent from each of the nations. This made it difficult for them to adequately plan for the number of participants in the respective working group, orientation and mentoring sessions. It would be helpful if such a list were made available shortly after the registration deadline to both allow the facilitators to inquire about holes in the slots of participants from the sending nations (in order to encourage them fill those slots) and to enable the facilitators to tailor their working group and orientation sessions to the participants they expect to have.

Recommendation: The Administrative Coordinators for future BSI planning sessions as well as the TTX should collect and share lists of registered participants with the facilitators once the registration deadline has been reached (perhaps also a week prior to that date), to include the names as well as role assignments for each participating delegation.

The following represent additional aspects of Exercise Development recommended for Sustainment or Improvement based on Albatross 2007.

e. Event Planning (sponsor and host)

Sustain

1. Agree on the objectives of each event, prior to the actual event, to ensure all parties work toward the same goals.
2. Propose scenario and agenda items (host's initiative).
3. Assist facilitation of events (host's role).
4. Integration of GIS into Scenario Planning: Include GIS experts in the Plans and Exercises WG meetings to assist with scenario and MSEL development and enable more realistic exercise support.
5. Maintain Working Group on public information aspects, to integrate relevant injects, and insert questions into the MSELs prior to the event.
6. Keep the scenario secret from potential exercise participants; only exercise developers or trusted agents from the Plans and Exercises (to include GIS

experts), Media and Public Information, or the Standards and Procedures working groups should be aware of the scenario.

7. Utilize a sound isolation system for the plenary interpreters so that the voices of the interpreters do not drown out the speakers during plenary sessions.

Improve

1. Coordinate between Sponsor and Host—Close and regular and communication and cooperation among U.S. sponsors/TTX facilitators, developers, and TTX hosts via email, conference call, or online conferencing tools during the periods between events.
2. Host and sponsors should each designate point persons or focal points to handle: 1. Administrative/logistics, as well as, 2. Exercise substance and agenda issues. The decision chain should be determined at the outset, preferably prior to the Initial Planning Conference
3. Host and sponsors should agree upon and clearly identify the roles and expectation of all event organizers, facilitators, and participants well in advance of the events.
4. Adhere to deadlines: It's important to maintain the proposed schedule for communications, drafts of exercise materials, invitation lists, and event planning.
5. Respond timely to email queries: With the time difference between sponsor and host, it's important to respond in a timely manner to email queries.
6. Determine realistic need for translation and interpretation support; ensure adequate numbers of qualified interpreters are available. Extremely important that interpreter support is available not only for plenary and VIP sessions, but also for the working group sessions and assistance during the exercise (during orientation and during execution).
7. Better integration of Public Information: Include elements of Public Information in the exercise planning events from the outset.

f. Working Group Structure

Sustain

1. Working group structure of Steering Group and three working groups (Plans and Exercises, Standards and Procedures, Media and Public Information)

Improve

1. Continuity of participants in Working Groups with goal of building exercise planning and development capacity amongst participants from each participating nation, as well as the ability to better integrate lessons learned from earlier TTX events.

g. Planning Meeting Structure/Schedule

Sustain

1. Retain the planning meeting structure/schedule of at least a bilateral Initial Planning Meeting (host and U.S. sponsors), multilateral Initial Planning Conference (all BSI nations), and multi-lateral Main Planning Conference,
2. Invite representatives of relevant regional and international organizations (e.g., BSEC, BLACKSEAFOR, EU, NATO/EADRCC, and other scenario specific organizations as appropriate).
3. Invite relevant subject matter experts to inform event planners at the IPC and MPC (e.g., WHO and U.S. CDC for bioterrorism, OPCW for chemical weapons scenario).

Improve

1. Plan to hold either a multi-lateral Final Planning Conference or a bilateral Coordination meeting (host and U.S. sponsors) between the MPC and the TTX.
2. Invitations: Host should send out invitations in a timely manner via fax and/or email and follow up written communication with personal phone calls to ensure participation.

h. Participation in Planning Meetings

Sustain

1. Consistent participation of representatives from BSI nations; send the same people to BSI planning activities to build upon lessons learned and experience gained from previous events.
2. Invite relevant international experts from scenario-relevant regional and international organizations to participate in planning conferences as well as TTX to ensure realistic representation of roles within the scenario.

i. Scenario Development

Sustain

1. Get input of scenario specific Subject Matter Experts to ensure realistic scenario and MSEL development.
2. Develop and flesh out scenario MSELs by Plans and Exercise Working Group, and get participation of all littoral nations, led by host and sponsor facilitators.
3. Incorporate GIS and Public Information aspects into MSEL development through participation of GIS and Public Information experts in MSEL development discussions during PEWG meetings at MPC.
4. Ensure relevant Subject Matter Experts are identified and invited to participate in Main Planning Conference (both plenary and PEWG sessions) to inform scenario development.
5. Maintain secrecy of MSEL from potential exercise players; ensure PEWG participants act as trusted agents.

Improve

1. Ensure draft exercise scenario and timelines as well as module objectives are appropriately vetted during the IPC with adequate expert review prior to the MPC to allow the PEWG maximum time to devote to MSEL development (as opposed to scenario revision) during the MPC.

j. Procedures Development

Sustain

1. SPWG should continue to use EADRCC standard message formats.
2. SPWG should discuss use of other appropriate regional or international standards and procedures for consequence management relevant to scenario.
3. SPWG should consider proposed experimental standards and procedures relevant to the scenario to utilize during exercise play.
4. SPWG should develop scenario specific exercise guide for participants in TTX that lays out relevant standards and procedures as well as methods to implement (such as the notional methodology for response to chemical release scenario included in the Albatross TTX exercise guide). This guide should build on work already done for the Tomis and Albatross TTX guides taking into account the lessons learned from both Tomis and Albatross. .

Improve

1. Exercise Guide development and distribution to TTX participants:
 - Ensure distribution prior to the TTX in electronic form to each individual who has registered (to ensure all members of national delegations have sufficient time for review of procedures as well as adequate time for translation where needed).
 - Where available, post the entire guide to an online Web site for review by exercise participants prior to the TTX (the PIMS hosted Albatross TTX Web site is a good example). Ensure participants are made familiar with the location of appropriate reference materials on the exercise Web site.
2. Ensure all exercise participants are familiar with basic EADRCC message formats and allocate adequate time during the TTX orientation to review use of these formats, as well as use of other relevant international formats (existing and/or proposed experimental forms).
3. Procedures development could better support exercise in formatting and identifying proper use of exercise guide during initial stages of the exercise. The Exercise Guide can be better formatted and hyperlinked to assist with more rapid scenario specific events response. This could be further enhanced by having the “preliminary injects” identify the specific reference material in the Exercise Guide for proper response. This would promote training and immediately build exercise participant confidence for responding properly and rapidly to the later more detailed MSEL injects.
4. Include a public information package in future exercise guides that provides examples of press releases and public information bulletins relevant to the exercise scenario.
5. Public Information approaches gleaned from littoral nations’ Public Information Plans should be included in the Exercise Guide

k. GIS Development

Sustain

1. National inputs of relevant data to GIS databases and tools for BSI activities (such as the BSI Viewer)
2. Design of GIS products that assist participant information-sharing as well as decision-making during exercise play

3. Integration of GIS database development with exercise scenario development, through participation of GIS experts in scenario development sessions of the PEWG

1. Steering Group Engagement

Sustain

1. Meeting of senior level delegates from each of the littoral nations during the IPC, MPC, and TTX to discuss BSI objectives, strategic direction, future activities, and future hosts
2. Steering Group review of recommended scenarios and schedules for BSI TTX activities
3. Ensure sufficient time allocated for Steering Group working sessions during planning meetings and TTX.
4. Encourage Steering Group participants to observe TTX Execution and Working Group activities and brief-backs during planning meetings. Ensure that they have adequate opportunity to do so by taking into account in developing their schedule.

2. Exercise Execution

a. Exercise Control Group

Some TTX participants had an issue with the International Organizations (IO) (i.e., OPCW, UN OCHA, and EADRCC) playing from within the ECG rather than in the main TTX play area. The Exercise Team determined to keep the IOs in the ECG as they were participating as players/controllers, so it was appropriate to have them together with the ECG and separate from the main play area. This facilitated good coordination between Scenario Managers and the IOs and allowed for rapid adaptation of the scenario Master Scenario Events Lists (MSEL) based upon IO expert inputs.

Recommendation: The placement of key international organizations in the ECG as players/controllers is appropriate and should be repeated in future BSI events.

b. Master Scenario Events List Injects

The MSELs for Modules 1 through 3 were very numerous and comprehensive, with a fair amount of detailed questions and tasks connected to each event inject. Many National Emergency Operations Centers (NEOC) were overloaded by the high volume and rapid pace of detailed injects and questions, and it quickly became clear during the

first module that the ECG had to slow down and cut back on the number of injects and questions/tasks sent out to players. Part of the challenge was English language related; some of those who understood spoken English were not as adept at reading and writing it, so even with the assistance of interpreters, the time it took them to respond to each inject was much longer than for a native or fluent speaker of English.

The first set of injects went to the Georgian NEOC almost exclusively to initiate a systems overload for them and force them to request outside assistance. However, because of the lack of qualified personnel in their NEOC and the language difficulties, coupled with their early focus on sending responses on inject questions to the ECG rather than prioritizing actual response and play with other NEOCs, a significant amount of the time allocated for Module 1 had passed before Georgia acted and interacted with the other NEOCs. To mitigate this, the controllers had to develop new injects to jumpstart the play of other NEOCs.

While the ECG adapted the pace of injects for Modules 2 and 3 (as well as cut back significantly the number sent), the NEOCs still complained of the stress of having to address ongoing emergencies from the three major scenario events which carried on and required continued response and action in Modules 2 and 3.

Recommendation: Future BSI TTX MSELs should be constructed with injects that are accompanied by fewer and more focused questions. The questions can be sent after the initial event inject, providing adequate time for players to first react to and act on the event inject before answering questions about their national response plans. MSEL developers should provide injects that will allow for maximum participant play, and bring in maximum participation without getting stalled on the affected nations' slowness to act. The event planners, hosts, and participants should consider whether they would like to have each module handle a distinct event or whether they desire overlap of events during all three modules. If events are to be continuously played out over the three modules, hosts should be encouraged to consider limiting the scenario to one or, at maximum, two major events in order to allow for more depth of response to those two events.

c. TTX Technical Setup/Information Technology Infrastructure and Support

The Partnership for Peace Information Management System (PIMS), a longstanding proven and reliable resource and portable infrastructure for CMEP activities provided overall excellent information technology support during the TTX. Much credit should be given to the use of experienced PIMS local In-Country Coordinators (ICCs) in

conjunction with the groundwork laid by the experienced Washington, DC based PIMS management/program officer team from previous years. The ICC program fosters partner country technical capacity building as well as capitalizes on regional expertise.

One of the areas which needs work based on Albatross 2007 execution is the pre-event technical setup. Future TTX will need more advance time than allocated for Albatross 2007 (see previous years for proven model for effective support). The PIMS team arrived at the same time as the rest of the exercise support team for Albatross, which did not allow adequate time between technical setup and event beginning for the exercise support team to get their materials ready for the TTX.

Recommendation A: Exercise planners should continue to utilize the PIMS exercise support model for a proven reliable resource for portable on-site information technology infrastructure.

Recommendation B: Exercise planners should continue to utilize the support of experienced PIMS local In-Country Coordinators (ICCs) in conjunction with DC based PIMS management/program officer team for seamless event and exercise IT management.

Recommendation C: For future BSI events, the PIMS team should arrive earlier than the rest of the event support team in order to enable adequate setup and testing time prior to event start.

d. BSI TTX Web Portal and Communications Tool

The BSI Web Portal demonstrated its continued utility as a tool in supporting preparations for, and execution of, the Albatross TTX. The Web portal was easily navigated, contained references to BSI materials from previous years, TTX planning meetings as well as reference materials and tools directly related to the execution of the TTX. This portal also provided a useful password protected space for scenario developers to post their draft MSELs as well as share ideas in the development of the Albatross TTX. Furthermore the portal provided a space for online TTX registration. In support of exercise execution, the Exercise Guide and Administrative Instructions as well as the Agenda and the BSI TTX Web Mail Communication Tool (the primary vehicle for exercise conduct and communication) were all integrated into the Web portal.

The prototype BSI Web Mail Tool used at the Albatross was an easy to use and flexible tool for exercise communications; the continued use of this tool for the FY08 TTX with some minor tweaks would be preferable to utilizing something different and/or

new given the comfort level already established with exercise participants. Use of this tool would eliminate the need to focus as much orientation time to training participants and would free up time for other activities (such as Hot Washes) in what can be an extremely tightly packed agenda during the TTX.

Recommendation A: For Future TTX, Exercise Planners should build upon the PIMS developed BSI Web Portal utilized successful in the Tomis and Albatross TTX, to post references and links to tools directly related to the execution of the TTX. Include key items such as the Exercise Guide, Administrative Instructions, Agenda and the BSI TTX Web Mail Communication Tool.

Recommendation B: Exercise developers and PIMS should continue to use and build upon the user-friendly BSI TTX Web Mail Tool used during Albatross for exercise communications in the next BSI TTX.

e. TTX File Directory Structure/Content/Permissions

There was discussion and disagreement about who should have permissions to determine TTX file structures, to include the permissions to read/write, add, and revise that structure, as well as who should be able to add materials and what process there should be to vet these changes or additions. Several individuals involved with event support sought different file structures and had different perspectives on the content for those event directories. The PIM's representative noted that he needed to get consistent guidance from TTX leadership on this (i.e., what is the structure; who has the final word on determining structure and granting permissions for adding content; is it the CMEP program manager from the Europe district, the senior exercise controllers, someone else?). It was suggested that there should be pre-meeting coordination for file content and file access permissions.

Recommendation A: In future, the exercise development team should determine the information requirements and data access needs for TTX players, providing recommendations based upon those requirements to PIMS prior to event execution. The event sponsor's senior TTX leadership needs to agree to this structure as well as determine who should have permissions to amend this structure. It is recommended that any amendments of the file structure during the event be done in coordination with the exercise development/execution support team.

Recommendation B: During the TTX there is a need to vet information intended for upload to the file structure through the ECG with the exercise support team, in order

to avoid uploading confusing or contrary information and to ensure information is placed in the proper location.

The following represent additional aspects of Exercise Execution recommended for Sustainment or Improvement based on Albatross 2007.

f. TTX Format

Sustain

1. Exercise Format provided participants face-to-face contact with personnel from other nations with whom they would need to interact during actual emergencies and facilitated development of social networks for improved official working relationships.
2. Hot Wash procedures following each module allowed nations to hear different perspectives from each of the officers (national and functional) as well as discuss options for improved response capabilities with all participants during the unstructured plenary session.
3. Keeping the scenario Master Scenario Events List close-hold made the TTX more realistic for the national participants, forcing them to think on their feet and utilize their existing response plans and procedures to address the situation.

g. Facilities

Sustain

1. Selection of facilities with conference rooms in proximity of hotel rooms (preferable to have rooms at same hotel).
2. Selection of facilities with space for plenary, break out meetings, nearby coffee break area, and area to set up computers dedicated to an “internet café.”
3. Selection of facilities with Internet connectivity (preferably with high-speed external connection and wireless capability within the facility) and business facilities to include copy machines, projectors, screens, and printers.

Improve

1. Ensure that all participants can stay in the same hotel or hotels nearby during the planning meetings and TTX.
2. Ensure there are lunch options nearby or arranged at the hotel for all participants (to include the facilitators and non-PfP) which are affordable,

and available within a reasonable time frame to enable all participants to get fed in time to participate in the full work program.

h. Preparing Participants, Pre-Arrival

Sustain

1. Send timely invitations that describe event goals and expectations, note expected participants' roles for meetings, give clear directions as to what is (and what is not) covered financially, and contain a clear RSVP deadline to participants from littoral states as well as regional and international organizations.
2. Distribute preliminary agenda to invitees.

Improve

1. Exercise planners, sponsors, and hosts should ensure focal points are clearly designated to oversee invitations, RSVPs, travel, and funding arrangements for the variety of participants.
2. Send invitations to U.S. based participants in a timely manner, clarify whose responsibility it is to extend such invitations, and ensure that a letter of invitation that clearly states roles and expectations of the participants as well as a registration form are sent to all participants well in advance of the event deadline.

i. Orientation/Support of Participants, On-Site

Sustain

1. Determine orientation session structure that addresses all the general objectives, scenario, and mechanics of play and then breaks out categories of participants for specific play instruction as was done for Albatross TTX (i.e., National Emergency Operations Center Players, Exercise Control Group, Controllers and After Action Officers, GIS Experts).
2. Determine the orientation agenda and the specific individuals who are to conduct these sessions prior to the TTX and have the orientation facilitators coordinate their plans such that they reinforce one another and the common exercise objectives.
3. Maintain an orientation group for Public Information delegates, scheduled such that it allows participants to attend other relevant orientation sessions (such as for the NEOC) to inform their participation in the TTX.
4. Provide translation/interpretation staff with copies of briefings prior to actual presentation to assist in accurate and fluid language interpretation.

Improve

1. Ensure adequate language interpretation support is made available for the plenary and the breakout orientation sessions. The lack of adequate capacity during Albatross led to several teams with weaker English language skills not fully understanding exercise instruction or exercise play.

j. Exercise Schedule/Time Allotted

Sustain

1. Clarity and brevity of subject matter briefings during plenary sessions.
2. Balance between presentation time and questions and answers

Improve

1. Allocate more time to prepare for and conduct hot wash sessions.

k. Administrative Support

Sustain

1. Host provision of “Secretariat” manned during entire event that is available to make copies and take care of administrative needs.

Improve

1. Ensure that Secretariat is available beyond the hours of the exercise or at least provide access to the copiers and computers outside of exercise time so that the facilitators and presenters can prepare their presentations and make necessary copies of handouts, and so forth.
2. Have core host nation, Secretariat team available in advance of the TTX who can produce and bring copies of the handouts and put them together in the participant packets, such that agendas, name-tags and participant packets are available prior to the start of the event (the night before, upon check in to the hotel).
3. Have a Host Nation designee coordinate with the appropriate sponsors point of contact (POC) on registration, sign in and maintaining up to date participants list, broken out by country, organization, TTX role and working groups as appropriate.

l. Public Information/Media Interaction

Sustain

1. Participation of one Public Information specialist to assist with press events during exercise
2. Participation of one Public Information specialist (if necessary separate from the one working the real press) to act as a mentor/facilitator/after action officer during exercise
3. Integrate Public Information aspects into the exercise scenario, allowing Public Information controller to provide additional injects as necessary during the play of the TTX.

Improve

1. Integration of Public Information aspects into the exercise scenario earlier on in the planning process (through discussion and inclusion at IPC and MPC)

3. Exercise Evaluation Issues

a. Hot Wash

Due to a lack of active host nation leadership and participation in the ECG at the outset of the TTX, the U.S. ECG facilitators led and conducted the first TTX module Hot Wash. The host and the exercise sponsor leadership both agreed that it would be desirable for the host to play a more prominent leadership role in these sessions. The host's exercise leadership designated a specific focal point to do this, and for the remainder of the exercise, the host led the Hot Wash and AAR sessions. The format of these sessions was also revised from the originally planned format that had the facilitator presenting not-for-attribution national comments based on the inputs of the national delegations and/or the national controller/observers to a format that had each NEOC presenting their consolidated comments for those sessions.

This revised format, led by the host nation, provided for a greater profile for them, as well as greater direct participation in the discussion by the national delegations. But since these national representatives were also players and members of their respective NEOCs as opposed to independent observers, one of the drawbacks of this methodology was that the national participants tended to be less self-critical and focused their critiques almost exclusively upon identifying what other players did wrong during the course of the exercise or upon criticism of exercise design/conduct/process aspects. Additionally, the subject matter expert facilitators were discouraged from presenting their comments during the Hot Wash in Modules 2 and 3. For a more productive Hot Wash session, it really would be useful to have more inputs from the independent controllers (to include

IO players/controllers) and topical facilitators (Geographic Information System (GIS), Public Information, Standards, and Procedures) as well as from the participating nations.

Recommendation: Future BSI TTX should employ a hybrid of the model that was adapted during Albatross 2007, in which the host nation designates a Hot Wash/AAR facilitator to lead the Hot Wash and AAR sessions and each nation must provide and present its own comments on the TTX play during those sessions. A caveat will be that nations should be encouraged to be self-critical and should be encouraged to send a controller/observer who is not playing to convey the Hot Wash and AAR comments. It would be instructive if the topical facilitators (GIS, Public Information, Standards, and Procedures), as well as the participating player/controller IOs were given an opportunity to share their comments during both the Hot Wash sessions and the AAR session.

b. National Response Plans (NRP) and BSI Impact

One of the stated U.S. objectives of the BSI TTX is to evaluate individual national-level response plans. This is challenging for the TTX AAR team because, aside from general overviews, most nations have not shared their detailed plans for a variety of reasons. Without better knowledge about specific national plans it is difficult to determine whether these plans are actually being referenced or if the participants are providing answers to the ECG questions based upon how they would believe or like their plans to function. Furthermore, without such a baseline it cannot be measured whether the TTX experience influences changes at a national level. It is recommended that other organizations with specific response plan expertise conduct supporting bilateral activities.

Recommendation: Build in a mechanism to future BSI TTX which surveys the current NRPs of each of the participating nations, which will ask them to discuss in what ways their plans have changed over the years and how what they have learned during the TTX has impacted or contributed to changes in those plans.

IV. CONCLUSION AND SUMMARY OF RECOMMENDATIONS

The observations and lessons identified by this report should assist participating nations in evaluating their own national response plans, not only in a chemical mitigation scenario, but also in their capacities to respond to the full spectrum of disasters. Where gaps have been identified in national, regional, or international coordination and assistance procedures, they should lead to mitigation actions through both national or international initiatives. Additionally, these recommendations should help guide the planning and execution of future table top exercises in substance and process.

The participants, the host, the organizers, and the facilitators evaluated the exercise as successful, because it brought together the littoral nations to respond to a difficult scenario involving factors and organizations that national civil protection agencies were not accustomed to addressing at national, regional, or international levels. The selection of a chemical scenario with three major events, two of which were deliberate releases as a result of terrorist attacks, required application of varied response expertise from national, regional, and international agencies and presented participants with challenges that required cross-sectoral solutions. These actions in turn enabled national participants to employ their existing national response plans, which exposed gaps in national response plans as well as gaps in international coordination procedures across these sectors. Nations appreciated the realism of the scenario events, and while challenged by the amount of activity in the scenario, adapted to these challenges during the exercise using creative solutions. The lack of consistency in responses (in terms of content and in format) revealed the need for more familiarity with standardized guidelines and procedures to enable more effective and efficient coordination for a multinational response effort.

A. EVALUATION OF BSI OBJECTIVES

The following findings grouped by the four overarching BSI Objectives are drawn from observations by the Albatross AAR Team.

1. Support and promote existing international, regional, and national structures and standards for response to threats to populations (including natural disasters and terrorist incidents).

As with the BSI TOMIS International 2005 TTX, the Albatross 2007 TTX was designed with the intent to support and promote national, regional, and international structures and standards for response, and it largely met this goal. The exercise planning process explicitly promoted this principle, and the intent was reinforced by the exercise guidelines as well as the participant orientation program. During the TTX, nations utilized existing national structures and protocols as a basis for their responses, although these national structures and protocols were not always adequate to address the response needs specific to the oil, HAZMAT and chemical WMD events in the scenario. The national capacities to respond to and contain these events varied by country. Two noticeable omissions remarked upon by observers included a lack of reference to national Red Cross elements, which are essential to disaster response at the local and national level, as well as a lack of Civil Protection community familiarity with national Maritime assets for mitigating the effects of oil spills. The IFRC observer noted the absence of the host nation's Red Cross representative, and the host indicated that the local Red Cross capacity was not as developed as it could be and that they did need to work on strengthening the national government ties to the Red Cross. The observer from the Georgian Maritime Rescue Service noted that many civil protection experts did not appear aware of their national maritime counterparts or the roles they might be able to play with their existing assets or through neighbors assets which could be easily requested via mutual assistance agreements.

In terms of regional standards, nations did utilize EADRCC procedures and message formats (although with varying degrees of consistency and content). While two CMEP-C SEE member nations participated as players in the TTX, this organization was not represented, mentioned or brought into play by participants in the TTX. Other than bilateral agreements, no Black Sea regional protocols exist that could be accessed for response to a chemical WMD attack or deliberate release of toxic industrial chemicals. Participants did not make mention to the specific regional arrangement for responding to oil spills which all littoral nations are a party, the Black Sea Regional Contingency Plan (BSRCP). One nation noted that they would work through the EU-MIC to provide assets for oil spill response (according to the relevant civil protection and maritime pollution response protocols which are applicable to two littoral nations Bulgaria and Romania who are EU candidates). For coordination and information sharing on the regional level,

some nations opted to utilize bilateral assistance rather than regional assistance, and the exercise as a whole exposed the lack of sub-regional capacity within the Black Sea Region to help coordinate response.

International structures and protocols were utilized during this exercise, although communications were not always adhered to in the preferred format. The primary international institutions whose structures and protocols participants said they would utilize and which they demonstrated use in their mock message communications included the OPCW and UN-OCHA. For the most part, nations who directed their communications to EADRCC did so with the knowledge that their notifications and requests would be shared and passed along from the EADRCC to UN-OCHA as appropriate. The IFRC was also noted by one country as an IO which they would work with and through to provide assets for the oil spill response. OPCW received direct communications toward the end of the second module and in the third module. The final event (Sarin release) was the only one which would have necessitated contact of OPCW under current international protocols. Thus play and interaction with OPCW was consistent with the flow of the scenario. UN-OCHA received much better play than during the TOMIS International 2005 TTX, noticeably due to the participation of an organizational representative in that role as a controller/player. The UN-OCHA representative received direct communications from all participants during the TTX, and interacted with the affected nation offering the deployment of UNDAC teams as well as assistance in locating national response assets from the MCDA database

2. Apply the internationally agreed policies and standards adopted by UN-OCHA, NATO's EADRCC (in EAPC format), and other international bodies, as appropriate.

Similarly to the first BSI TTX-TOMIS, during the Albatross TTX, nations generally reported that they would utilize EADRCC policies, standards, and processes. But when it came to applying them during exercise play, they did not do so consistently nor did they adhere to numbering protocol in communications. The templates were often not filled out clearly or in enough detail, leaving holes which required further coordination. The lack of clear marking on the subject line of the messages as well as the lack of distinguishing language in the message content, made it difficult to track the multiple messages which were directed at response to the three major events which occurred during this TTX. Often confusing references (to time factors in particular) caused difficulty in coordination of assistance offers and acceptances.

3. Assist EAPC nations in developing emergency management GIS experience as well as spatial databases and Internet tools to assist in emergency planning and response.

Headway was made in achieving this goal. Nations used GIS tools to support decision-making and assistance requests during the TTX, reflecting effective application of USACE training on GIS Data Creation and Using GIS to support decision-making. National development of GIS experience and capacities showed promise but still requires emphasis across the board particularly in the role GIS can play and how the BSI nations can support each other regionally. Several of the participating nations proposed the development of a concept to incorporate a regional “GIS Team” into future TTX play, along the lines of a joint field office deployment of GIS experts which FEMA utilizes during U.S. disaster events, to encourage pooling of data as well as regional coordination and information sharing.

The levels of experience displayed by the five TTX participating nations was uneven; indicating a need for more standardized skill development with measures of progress. As a result the GIS facilitators from USACE plan to develop a draft GIS familiarization/certification program.

4. Promote regional data contributions to and use of the CMEP Black Sea Viewer and related geospatial tools.

Participating nations kept their national data in their own national databases during the exercise. Although they felt comfortable sharing completed products, they were more hesitant about sharing raw data regionally even when prompted to do so by scenario injects. A lack of comfort existed in holding the data in a regional database. Thus, limited data were added to the Black Sea Viewer based upon regional contributions.

B. RECOMMENDATIONS:

The following recommendations and key conclusions can be made about the overarching goals of the CMEP BSI based upon achievement of Albatross TTX Exercise objectives as measured by observations from the Albatross Exercise Control Group’s After Action Team. These recommendations are broken out by category relative to BSI Objectives, Albatross TTX Module Objectives, Functional and National Perspectives, and Evaluation of Albatross Mechanics of Exercise Development and Execution. From

these recommendations we can draw some conclusions for the way ahead based on lessons identified for both real-world applications and for future TTX planning and play.

1. Findings and Recommendations to Reinforce BSI Objectives

Finding (F) 1-A. Support Existing National Standards, Exercise the Role of the National Red Cross: While national standards were used during the TTX by each of the participating nations, it was noted that the role of national Red Cross branches was sparingly referenced during the exercise. The capacities of the Red Cross are a tremendous resource for supporting national level response, with reachback to the regional and international level. The IFRC attendee to Albatross indicated a desire to participate in the exercise development process for a future BSI TTX iteration.

Recommendation (R) 1-A. Future TTX should include local Red Cross as well as IFRC representatives as observers and/or participants. Future TTX planning should include briefings on the role of the Red Cross in disaster response at the local, regional, and international levels and future scenarios should build in injects to stimulate interaction with the Red Cross.

F1-B. Support Existing National and Regional Protocols, Exercise the Role of Maritime Aspects: The nations of the Black Sea each have national maritime elements in their governments which can play a role in disaster response at sea, relying on their own assets or accessing those of neighbors via existing mutual assistance agreements. Although these elements could have supported oil spill response, this aspect was not incorporated into Albatross and civil protection experts appeared to have little familiarity with those maritime elements.

R1-B. A future TTX could, depending on the scenario, include national maritime elements, including briefings on their roles and capacities during exercise planning sessions, incorporating these aspects into the scenario as applicable, with inclusion of maritime participants during the TTX as players or observers as appropriate.

F1-C. Support Existing International and Regional Standards: An major focus was on supporting existing standards through the exercise design, to include the participation of key international bodies, UN-OCHA, EADRCC, and OPCW, in the exercise. This inclusion responds to the recommendation from the TOMIS BSI TTX AAR and represents an improvement which injected to the exercise a much more realistic interplay between NEOCs and international organizations.

R1-C. Future BSI TTX events should include the appropriate international bodies as participants whenever possible.

F1-D. Improved Regional Coordination: In the Black Sea region, there is a lack of adequate regional structures and standards to address disaster response needs, including those required for consequence management in response to an intentional chemical WMD release by terrorists. The BSI TTX series could act as a testbed for proposed regional coordinating mechanisms.

R1-D.1. Nations in the Black Sea region should consider developing and refining regional capacities and protocols to enable quicker and more coordinated regional responses for the full spectrum of natural and man-made hazards. They could begin by offering up national equipment and units to the UN-OCHA Military-Civilian Defense Assets (MCDA) database.

R1-D.2. The BSI TTX series should adapt accordingly to include all appropriate regional coordination structures and protocols, whether real or proposed.

F2. Emphasize and support use of recognized policies and standards of UN-OCHA, EADRCC, and other relevant international bodies: Although most nations indicated they would utilize standard EADRCC protocols to request international assistance, not all nations consistently used and supported the recognized policies and standards of EADRCC and other relevant international bodies during the TTX.

R2. Future exercise orientation and preparatory materials should continue to emphasize participant use and adherence to internationally agreed policies and standards of UN-OCHA, EADRCC, and other relevant international bodies (such as OPCW in this scenario). The development of a web-based automated disaster request management system on the EADRCC website with pull down menus and automated numbering could potentially address some of these issues.

F3. Assist EAPC nations in developing emergency management GIS experience as well as spatial databases and Internet tools to assist in emergency planning and response: Although nations utilized GIS for emergency management coordination and decision-making during the TTX, application was uneven across the board given varied experience levels of participants. This area showed progress over the previous TTX, but the lack of a systematic approach towards developing individual and national civil and military GIS capabilities hampers progress. The civilian and military communities can benefit from a greater understanding and working knowledge of GIS tools: those in the technical community who are the current and/or future developers and

users of GIS tools, and the operational responders and decision-makers who need to be familiar with the utility of the products generated by GIS for coordination, situational awareness, and decision-making in disaster response. The use of GIS is directly relevant to the goal of enhancing civil-military cooperation and interoperability.

R3-A. BSI organizers and hosts should continue to integrate GIS tool usage into the planning, orientation, and execution of Table Top Exercises. The sponsors and hosts should continue to brief participants on the various applications of GIS tools, giving the host nation and other experienced GIS experts from the region the opportunity to share their experiences in using the tool, as well as the opportunity to demonstrate its utility for their littoral neighbors.

R3-B. Focus GIS familiarization and skill development on the technical community (current and future developers/users of GIS) as well as the civilian and military decision-makers and operational responders who need to be familiar with the utility of the products generated by GIS for coordination, situational awareness, and decision-making in disaster response.

R3-C. Explore adoption of a BSI/CMEP GIS familiarization/certification program.

R3-D. Explore adoption of a regional GIS Team concept for the next BSI TTX.

F4. Promoting regional data contributions to and the use of the CMEP Black Sea Viewer and related geospatial tools: Regional data contributions to the CMEP Black Sea Viewer, much less any related geospatial tools, did not occur during this exercise because of continued national sensitivities to sharing data. Nations were more comfortable sharing completed products. To tackle regional problems in the most efficient and effective manner, regional GIS information-sharing is paramount.

R4. In tandem with the recommendations for objective number three (R3), the BSI TTX series should continue to provide opportunities for GIS experts from the littoral region to work together to provide useful national inputs into GIS supporting databases with the goal of more comprehensive GIS tools such as the Black Sea Viewer. Illustrating the utility of pooled regional data for improved efficiencies in disaster response to policy level decision-makers might help to increase the level of trust and willingness to share more information with regional neighbors. The Regional GIS Team concept might also facilitate more regional information sharing.

2. Specific Recommendations Drawn from TTX Module Play

The Albatross TTX exercise scenario was broken down into three modules, each of which was designed to achieve a certain set of objectives specific to an oil, toxic industrial chemical (TIC), and chemical weapons agent event to support the overarching BSI objectives. The following specific recommendations were drawn from TTX Module Play. These recommendations pertain predominantly to improving real-world response, but also include some related to exercise design. The majority of exercise design related recommendations appear under the Administrative Recommendations section found later in this summary. Each module recommendation below is coded as such: ED = Exercise Design, RW = Real-World application.

Module 1

1. Future TTX MSELs should take into account language concerns as a time factor for comprehension and response turnaround, when producing scenario injects and determining the frequency of inject release. (ED)
2. All National Emergency Operations Centers (NEOC) need to ensure their full team is available for duty at the STARTEX, particularly the host nation (which in the BSI TTX series will be the Affected Nation), because other NEOC play often depends upon host nation initial actions and notifications to the international community. (ED)
3. Black Sea littoral nations should utilize their TTX information sharing experience in real-world application, particularly regional and international coordination to share satellite imagery to produce common GIS products to support disaster mitigation. (RW)
4. Future BSI TTX should consider a role for other national players in the NEOCs, such as representatives from the National Red Cross or Foreign Affairs Ministry, to enable playing out of that coordination element in disaster response. (ED)
5. The civil protection agencies of the littoral Black Sea nations should familiarize themselves with their national maritime counterparts as well as the existing regional and international agreements they are party to, such as those for mutual assistance for the spill of oil substances at sea. (RW)
6. When developing future BSI TTX scenarios on the littoral Black Sea, maritime elements from these nations should be included in the planning conferences (to brief

the participants as well as provide feedback and input to scenario development), and be invited to observe future TTX. (ED)

7. NATO-EADRCC standard message formats should be utilized as much as possible to enable clear and consistent communication during emergencies, particularly in coordination with assistance offered or received from EAPC countries. Black Sea littoral states should ensure their Civil Protection NEOC personnel (including the ones who participate in exercises) have familiarity with these formats and utilize them during TTX when appropriate, taking care to clearly fill out the forms and provide the appropriate amount of detail. (ED, RW)

Module 2

8. Affected Nations should provide frequent and clearly articulated situation reports to the international assistance community (including EADRCC and UNOCHA) to ensure transparency and effective provision of appropriate assistance in a timely and coordinated manner. (ED, RW)
9. Regional assistance providers neighboring an Affected Nation should make efforts to improve their coordination and communication with one another prior to an actual disaster. (RW)
10. BSI nations should review their public information strategies for disaster response situations and develop such strategies if they do not already exist. NATO's "Budapest Guidelines" could provide a potential reference for public information management in crisis situations. (RW)
11. Future BSI TTX events should continue to include orientation activities and exercises that support development of the littoral nations' public information capacities for disaster response scenarios. NATO's "Budapest Guidelines" could provide a potential reference for public information management in crisis situations. (ED)

Module 3

12. Black Sea nations should apply to future real-world scenarios the lessons learned from the Albatross TTX experience regarding requesting and coordinating international assistance to mitigate the effects of stressed healthcare systems. (RW)
13. Future BSI TTX scenarios should include MSELs that exercise coordination of international assistance for containment of disasters. (ED)
14. Future BSI TTX should be designed to incorporate international recovery assistance, to include placement and location of teams as well as coordination of arrival. (ED)
15. Future TTX should integrate more public information injects throughout the modules to stimulate information sharing with populations on the impact and status of disaster response, containment, and recovery assistance. (ED)

3. Functional Recommendations

These recommendations, broken down by functional category as observed by functional AAR officers, pertain to real-world and exercise design issues and are coded accordingly.

a. Standards and Procedures

1. National cells could do a better job of using standard message formats designated for exercise use (both those existing EADRCC formats as well as proposed formats, in this case the OPCW reporting templates). (ED) In real-world application, consistent use of standard forms, particularly where common language and translation capabilities are limited, can facilitate better communication as well as more rapid and effective coordination in responding to emergencies. (RW)
2. Nations should review whether their national response plans and procedures facilitate communication with local authorities, especially local medical personnel who are critical to initial chemical release response, in terms of local knowledge, and conveying basic information to the public to maintain calm in the population. (RW)
3. Nations should ensure their national response plans facilitate the utilization of and coordination with relevant international bodies such as OPCW, UN-OCHA, EADRCC, and other appropriate organizations to avail of the additional assets and mechanisms that can be brought to bear to mitigate and contain the emergency. (RW)

b. GIS

1. Familiarity with the latest commonly used GIS tools, in this instance ArcGIS 9.x, needs to improve. (RW)
2. There needs to be a better understanding of the possible role of GIS in supporting disaster response, as well as the potential support BSI nations can provide each other with GIS products. (RW, ED)
3. Future TTX should integrate concepts which promote regional GIS coordination. (ED)
4. BSI and CMEP GIS activities need more refinement in order to enhance individual and national-level skill development/capabilities and better measure progress. (ED, RW)

c. Public Information

1. National delegations should provide consistent participation by public information delegates throughout the planning and execution phases of the BSI TTX series to support better learning and application of knowledge. (ED)
2. The BSI media and public information training program should continue as it meets the participating countries needs. The open dialogue enabled shared learning between the littoral nations and the visible momentum was demonstrated at the TTX, through increased engagement in interviews as well as in the coordination and transmission of responses to the media queries. (ED)
3. Each littoral delegation is encouraged to assign a public information specialist to the communications protocol working group in order to aid development of a regional response plan within the public information arena. (RW, ED)

4. National Recommendations

The following represents a compilation of recommendations based upon observations and comments by national delegations from each of the participating littoral nations

- a. **Message Formats:** Given concerns expressed by several littoral nations regarding the applicability of the standard message formats designated for use during the BSI TTX, the following issues should be discussed and reviewed in the Standards and Procedures Working Group prior to the next TTX: (1) BSI standard message formats should be reviewed for consistency with standard operating procedures of EADRCC and CMEP-C South East Europe (SEE) Handbook; (2) The role of the Coordination message should be clarified; (3) The role of standardized message numbering/coding (with type, country and number) needs to be discussed, since some nations were skeptical as to the utility and applicability of this aspect during

real-world emergencies. The issue of time coding was discussed as well; TTX participants need to indicate the operational time on their message traffic in accordance with the MSEL injects.

- b. **MSEL injects:** More precise time scales (real to operational) should be developed for future TTX events. Questions should be stated more clearly and the intended response recipient should be more clearly indicated to players in the MSEL injects. A few nations commented that more time was spent answering Control Group injects than working as an EOC (exchanging messages to request assistance); they recommended that future TTX structure should have more direct communications and connections between NEOCs and less between ECG and NEOC.
- c. **NEOC Computer/Network Setup:** To facilitate more efficient response and flow of information, one nation suggested that more computers should be provided to each of the NEOCs (three computers per NEOC instead of two). Another nation suggested that in terms of information sharing and distribution during the TTX, a shared network folder should be used rather than sending attachments back and forth to one another
- d. **TTX Module Design:** One nation suggested that any future TTX have one discreet event per module, as this TTX was difficult with the requirement to continue to respond to events that started in Modules 1 and 2 during Module 3.
- e. **Future Scenario Aspects and TTX Participants:** One nation suggested building the activities of NGOs into the scenarios of future exercises as well as inviting and including both national/local Red Cross as well as the IFRC
- f. **Hot Wash:** Several nations recommended that more time be allocated for Hot Wash preparation.

5. Observer Recommendations

- a. The role of national Red Cross organizations (as conduits to the larger IFRC network) should be included in future TTX.
- b. Notification messages sent by Affected Nations should contain more detailed information than was included during the TTX
- c. Participants should take lessons learned from the TTX back to their home nations and establish efforts to work more effectively with the media and to establish more effective local community relationships.

6. Administrative Recommendations

The following recommendations are based upon an evaluation of the mechanics of exercise development and execution. Some pertain to exercise design.

a. Exercise Development

1) Host/Sponsor Arrangements

Develop a clearly identified set of guidelines for hosting a TTX (which delineates host and sponsor responsibilities) to be discussed and agreed upon between sponsor and host prior to initiating the planning process for the next BSI TTX. These guidelines should include identification of working-level contacts for development of the exercise as well as key focal points for the event execution (to include the areas of administrative support, exercise control, Hot Wash facilitation, and media/public information focal point).

2) Scenario Complexity

Future BSI TTX should employ a basic scenario with one major event, which can be developed in a way that can engage all TTX players (such that it stimulates the stand up of their NEOCs) and that stimulates regional and international coordination to respond to and mitigate the effects of the disaster.

3) Public Information Activities

If Public Information is to be an objective and a priority for future TTX events, this aspect should be better streamlined into the planning, development, and execution of the event. This requires attention of the planners, sponsors, and host. There needs to be more interaction between this group and the scenario development group during the Initial and Main Planning Conferences, and clear leadership support needs to be conveyed for the role and priorities of Media and Public Information in this series. Attention should be given to cultivating appropriate participants (through the invitation and registration process). Event administrative coordinators and planners need to allocate appropriate meeting space and sufficient time on the agenda for this group during the planning and execution stages.

4) Identification of Registered Participants

Administrative Coordinators for future BSI planning sessions as well as the TTX should collect and share lists of registered participants with the facilitators once the registration deadline has been reached (perhaps also a week prior to that date), to include the names as well as role assignments for each participating delegation.

5) Event Planning

- a) Hosts and sponsors need to work closely together and maintain clear lines of communication, with regular updates via email and telephone to ensure that both parties are in agreement on the planning and execution and that any concerns can be worked through in a timely manner prior to events. Both parties need to be responsive to email queries and take into account time zone differences. Host and sponsors should each designate point persons or focal points to handle administration/logistics, as well as exercise substance and agenda issues. The decision chain should be determined at the outset, preferably prior to the Initial Planning Conference. The roles and expectations of all event organizers, facilitators should be clearly identified as early as possible, per agreement between the host and sponsor.
- b) Hosts need to determine realistic needs for interpretation support during the IPC, to ensure adequate numbers of qualified interpreters are available (for the MPC and TTX, plenary and VIP sessions, as well as for the breakout WG sessions, and for assisting players during the TTX execution). If event budget cannot cover this requirement, participants should be advised to bring their own support as needed. A sound isolation system should be employed during the plenary session of the MPC and TTX so that interpreters' voices do not drown out plenary speakers.
- c) Public Information should be better integrated into exercise planning events from the outset. The Public Information Working Group should continue to feed relevant injects and questions to the PEWG for inclusion in the Master Scenario Events List.

6) Working Group Structure

- a) BSI nations should maintain the structure of one Steering Group and three working groups (Plans and Exercises, Standards and Procedures, Media and Public Information) where GIS experts participate in the PEWG and Public Information delegates provide input to both the PEWG scenario developers as well as to the Exercise Guide development undertaken by the SPWG.
- b) BSI nations should strive for more continuity of national participants in working Groups for each of the consecutive planning conferences to better integrate lessons learned from earlier TTX events, and build exercise planning and development capacity amongst the participants

7) Planning Meeting Structure Schedule

- a) Retain planning meeting structure/schedule to include at least a bilateral Initial Planning Meeting (IPM) (host and U.S. sponsors), a multilateral Initial Planning Conference (IPC) (all BSI nations), and multilateral Main Planning Conference (MPC). Plan to also include either a multi-lateral Final Planning Conference (FPC) or a bilateral Coordination meeting (host and U.S. sponsors) between the MPC and the TTX.
- b) Invite representatives of all relevant regional and international disaster response related organizations as well as scenario specific organizations to planning meetings. Ensure that relevant subject matter experts are invited to present and/or serve as technical advisors to event planners at the IPC and MPC.
- c) Ensure event invitations are sent out in a timely manner via fax/and or email and that written communication is followed by phone call follow-up to ensure participation of key invitees.

8) Participation in Planning Meetings

- a) As noted in reference to working group participation, nations are encouraged to send the same people to planning activities to build upon lessons learned and leverage experience gained from previous events.
- b) The U.S National Guard State Partnership program should continue to be leveraged for attendees to observe and assist during planning and execution of the TTX.
- c) Care should be taken to give plenty of attention and notice to invitations of international experts from scenario-relevant regional and international organizations. These experts should be invited to attend both planning conferences as well as the TTX to ensure realistic scenario development and realistic representation during the exercise. Such participants should get ample advance notice to ensure their ability to attend.

9) Scenario Development

- a) PEWEG should continue to be the key forum for development of the scenario MSELs, with participation of scenario relevant representatives of all littoral nations, input from the GIS and Public Information communities, and the benefit of subject matter expertise.

- b) Scenario specific Subject Matter Experts should be identified and invited to participate in the MPC (both the plenary and the PEWG sessions) to inform scenario development.
- c) Those involved with scenario and MSEL development are to be trusted agents and should keep the MSEL secret from exercise participants to maintain the integrity of the TTX.
- d) Ensure draft exercise scenario and timelines, as well as module objectives, are appropriately vetted during the IPC with adequate expert review prior to the MPC to allow the PEWG maximum time to devote to MSEL development (as opposed to scenario revision) during the MPC.

10) Procedures Development

- a) The SPWG should review existing EADRCC standard message formats used for coordinating assistance, focusing in particular on the areas of concern observed during Albatross to include message numbering and identification as well as references to times (deployment versus asset availability). The SPWG should also discuss other appropriate regional or international standards and procedures for consequence management and review the necessity of the “Coordination” message format. Where current procedures are lacking, the group should entertain the development of experimental standards and procedures relevant to the TTX scenario. In developing future exercises, the PEWG should consider using formats developed by participants during both the TOMIS and Albatross TTX.
- b) The SPWG should develop scenario-specific exercise guide for TTX participants that lays out relevant standards and procedures as well as illustrates implementation methods (such as the notional methodology for response to chemical release scenario included in the Albatross TTX exercise guide). This guide should build on work already done for the Tomis and Albatross BSI TTX guides taking into account the lessons learned from both exercises. The Exercise Guide should be widely distributed in electronic form to each registered participant in the TTX well in advance of the event to allow time for review and possible translation in advance of the exercise. This guide should also be posted to an online Web site, as was done by PIMS for TOMIS and Albatross, to enable participant reference prior to and during the exercise. Hosts and Exercise Developers should ensure that participants are made familiar with the location of the appropriate reference materials (including this guide) on the TTX website.

- c) Adequate orientation time should be allocated for exercise participants to ensure familiarity with basic EADRCC message formats as well as other scenario relevant communication formats (existing or proposed experimental forms).
- d) The PEWG should include a public information package in future exercise guides that provides examples of press releases and public information bulletins that are relevant to the exercise scenario. Public Information approaches gleaned from littoral nations' Public Information Plans should be included in the Exercise Guide.

11) GIS Development

- a) Exercise planners and National players should continue to design and utilize GIS products that assist participant information sharing as well as decision-making during exercise play.
- b) Nations should work on contributing more relevant national data to GIS databases and tools to provide for more realistic and useful GIS application during the exercise.
- c) Exercise planners should continue to integrate GIS database development with exercise scenario development, through participation of GIS experts in scenario development sessions of the PEWG.

12) Steering Group Engagement

- a) Exercise hosts and planners should continue to provide an opportunity for senior level delegates from each of the littoral nations to meet in the Steering Group format during the IPC, MPC and TTX to discuss and review BSI objectives, recommended scenarios, strategic direction, future activities and timetables, as well as future TTX hosts.
- b) Exercise hosts and planners should allocate plenty of work session time for the Steering Group during planning meetings and the TTX.
- c) Event planners should encourage Steering Group participants to observe TTX Execution as well as Working Group activities and brief-backs during planning meetings. Ensure that they have adequate opportunity to do so by taking into account in developing their schedule.

b. Exercise Execution

1) Exercise Control Group

The placement of key international organizations in the ECG as players/controllers is appropriate and should be repeated in future BSI events.

2) Master Scenario Events List Injects

Future BSI TTX MSELs should be constructed with injects that are accompanied by fewer, more focused questions. The questions can be sent after the initial event inject, providing adequate time for players to first react to and act on the event inject before answering questions about their national response plans. MSEL developers should provide injects that will allow for maximum participant play, and bring in maximum participation without getting stalled on the affected nations' slowness to act. The event planners, hosts, and participants should consider whether they would like to have each module handle a distinct event or whether they desire overlap of events during all three modules. If events are to be continuously played out over the three modules, hosts should be encouraged to consider limiting the scenario to one or, at maximum, two major events in order to allow for more depth of response to those two events.

3) Exercise Information Technology: Communications Infrastructure/IT Support

- a) Exercise planners should continue to utilize the PIMS exercise support model for a proven reliable resource for portable on-site information technology infrastructure.
- b) Exercise planners should continue to utilize the support of experienced PIMS local In-Country Coordinators (ICCs) in conjunction with DC-based PIMS management/program officer teams for seamless event and exercise IT management.
- c) Exercise planners should ensure PIMS exercise support equipment and personnel arrive on site adequately in advance of participant arrival to ensure time to adequately set up and test equipment and network.

4) BSI Web Portal/Web Mail Communications Tool

- a) Exercise planners should build upon the PIMS developed BSI Web Portal utilized successfully in Albatross TTX, to post references and tools directly

related to the execution of the TTX. Include key items such as the Exercise Guide, Administrative Instructions, Agenda and the BSI TTX Web Mail Communication Tool.

- b) Exercise developers and PIMS should continue to use and build upon the user-friendly BSI TTX Web Mail Tool used during Albatross for exercise communications in the next BSI TTX.

5) TTX File Directory Structure/Content/Permissions

- a) In future, the exercise development team should determine the information requirements and data access needs for TTX players, providing recommendations based upon those requirements to PIMS prior to event execution. The event sponsor's senior TTX leadership needs to agree to this structure as well as determine who should have permissions to amend this structure. Any amendments of the file structure during the event should be done in coordination with the exercise development/execution support team.
- b) During the TTX there is a need to vet information intended for upload to the file structure through the ECG with the exercise support team, in order to avoid uploading confusing or contrary information and to ensure information is placed in the proper location.

6) TTX Format

- a) Exercise planners should retain the TTX Exercise format used in Albatross that provided participants face-to-face contact with personnel from other nations with whom they would need to interact during actual emergencies and facilitated development of social networks for improved official working relationships.
- b) Exercise planners should retain the Hot Wash format utilized during Albatross, where a Hot Wash was held following each module that allowed nations to hear different perspectives from each of the officers (national and functional) as well as discuss options for improved response capabilities with all participants during the unstructured plenary session.
- c) Exercise planners and scenario developers should keep the TTX scenario Master Scenario Events List close-hold for a more realistic exercise that forces participants to think on their feet and utilize their existing response plans and procedures to address the situation.

7) Facilities

- a) Exercise planners should seek facilities with conference rooms in proximity of hotel rooms (preferably at the same hotel).
- b) Exercise planners should seek TTX facilities which have adequate space for break-out as well as plenary sessions, have a nearby coffee break area, and have a conveniently located “internet café” and an administrative/copying area.
- c) Exercise planners should seek TTX facilities with adequate Internet connectivity (preferably with high-speed external connection and wireless capability within the facility) and business facilities to include copy machines, projectors, screens, and printers. If not, arrangements should be made by the host and sponsors to bring all of the necessary capacities.
- d) Exercise planners should ensure all participants can stay in the same hotel or hotels nearby during the planning meetings and the TTX.
- e) Exercise planners and hosts should ensure there are lunch options nearby or arranged at the hotel for all participants (to include facilitators and non PfP attendees) which are affordable, and available within a reasonable time frame to enable all participants to eat in time to participate in the full work program.

8) Preparing Participants, Pre-Arrival

- a) Exercise planners (sponsors/hosts) should ensure timely invitation of participants that explain event goals and expectations, note expected participants roles for meetings, give clear directions as to what is (and what is not) covered financially, and contain a clear RSVP deadline to participants from littoral states as well as regional and international organizations.
- b) Exercise Planners should distribute a preliminary agenda to invitees.
- c) Exercise planners, sponsors, and hosts should ensure focal points are clearly designated to oversee invitations, RSVPs, travel, and funding arrangements for the variety of participants.
- d) Exercise planners should send invitations to U.S. based participants in a timely manner, clarify whose responsibility it is to extend such invitations, and ensure that a letter of invitation that clearly states roles and expectations

of the participants as well as a registration form are sent to all participants well in advance of the event deadline.

9) Orientation/Support of Participants On-Site

- a) Exercise hosts should ensure adequate language interpretation support is made available for the plenary and the breakout orientation sessions. Provide translation/interpretation staff copies of briefings prior to actual plenary presentations to assist in accurate language translation.
- b) Exercise planners should maintain the orientation group for Public Information delegates scheduled such that it allows for participants to attend other relevant orientation sessions (such as for the NEOC) to inform their participation as part of their national team in the TTX.
- c) Exercise planners should structure orientation sessions that address all the general objectives, scenario, and mechanics of play and then breaks out categories of participants for specific play instruction as was done for Albatross TTX (i.e., National Emergency Operations Center Players, Exercise Control Group, Controllers and After Action Officers, GIS Experts). The orientation schedule should be developed in advance with the agenda and facilitators coordinated in a way that reinforces TTX objectives and allows all players to attend appropriate sections.

10) Exercise Schedule/Time Allotted

- a) Exercise planners should maintain the balance between presentation time and Q&A during plenary sessions.
- b) Exercise planners should allocate more time to the agenda to prepare for and conduct Hot Wash sessions during the TTX.

11) Administrative Support

- a) Exercise hosts should ensure adequate availability of Secretariat during the entire TTX timeframe, including access to facilities (such as copiers, computers, and printers) to presenters, facilitators, and controllers outside of exercise play time.
- b) Exercise hosts should have an advance core Secretariat team available prior to the TTX who can produce and bring copies of the handouts and put them together in the participant packets, such that agendas, name tags and participant packets are available prior to the start of the event.

- c) Exercise hosts should designate a focal point to coordinate with the sponsors POC on registration, sign-in and maintaining up to date participants lists, broken out by country, organization, TTX role and working groups as appropriate.

12) Public Information/Media Interaction

- a) Exercise planners should continue to include Public Information aspects in future TTX and do a better job of integrating these aspects into the scenario early on through discussion and inclusion of Public Information representatives during planning sessions (IPC and MPC).
- b) Exercise planners should continue to provide support and preparation of public information participants from national delegations by the Media Public Information Mentors/Facilitators during planning, orientation, and exercise play.
- c) Exercise planners should incorporate adequate numbers of Public Information facilitators in the TTX in order to provide both assistance with real world media events during the exercise as well as to act to as control group mentor, facilitator and after action officer (ideally a different person than the one dedicated to working with the press).

c. Exercise Evaluation Issues

1) Hot Wash/After Action Review

Future BSI TTX should employ a hybrid of the model that was adapted during Albatross 2007, in which the host nation designates a Hot Wash/AAR facilitator to lead the Hot Wash and AAR sessions and each nation must provide and present its own comments on the TTX play during those sessions. A caveat will be that nations should be encouraged to be self-critical and should be encouraged to send a controller/observer who is not playing to convey the Hot Wash and AAR comments. It would be instructive if the topical facilitators (GIS, Public Information, Standards, and Procedures), as well as the participating player/controller IOs were given an opportunity to share their comments during both the Hot Wash sessions and the AAR session.

2) National Response Plans and BSI Impact

Build a mechanism into future BSI TTX that surveys the current NRPs of each of the participating nations, and asks them to discuss in what ways their plans have changed

over the years, and how what they have learned during the TTX has impacted or contributed to changes in those plans.

C. WAY AHEAD

Much fertile ground exists for the Black Sea Initiative to cover in future Table Top Exercises. Albatross and the planning activities leading up to the exercise continued the trend established in the Tomis International 2005 TTX for the enhancement of partnership and coordination within the region.

Albatross continued fostering the development of professional relationships among nations, disciplines, and organizations, in an exercise scenario that incorporated the plausible threats and challenges that currently exist. The participants were able to utilize a no-fault environment to employ their existing national-level plans and existing regional and international protocols and capacities in a chemical consequence management response. Through the demonstration of the strengths and weaknesses of these plans and procedures, lessons were identified by the controllers, the participating international organizations, and the nations themselves for generic disaster response and chemical-specific response requirements (oil spills, toxic industrial chemical release, chemical weapons agent Sarin release). These lessons can be taken back home for consideration in revising national and international response protocols.

The BSI TTX series should build on the lessons of Albatross 2007 and integrate as much of that learning into the design of the next Table Top Exercise. These Table Top Exercises can continue to serve as a facility for testing and improving national, regional, and international response plans. They can continue to facilitate relationship building among the disaster response experts in the neighboring countries as well as with their key counterparts at relevant international organizations (such as UN-OCHA, EADRCC, OPCW, and others). The Black Sea Initiative can serve as a regional activity on which existing regional fora such as Black Sea Economic Cooperation, Black Sea Forum, and BLACKSEAFOR can build for improved security in the Black Sea basin.

The BSI Steering Group took the first steps toward defining the future activities of the Black Sea Initiative at its meeting held during the Albatross TTX in February 2007. During that meeting, the senior representatives of each of the littoral nations identified several nations that are willing to host Future BSI TTX events. The Steering Group announced that Moldova specifically expressed interest in hosting the next BSI TTX in 2008. Planning for this will begin in the fall of 2007. Turkey expressed interest in

hosting a future event, which the Steering Group warmly endorsed. Table 1 below charts BSI TTX host countries (past and future) as well as potential scenarios.

Table 1. BSI Way Ahead: Future TTX Hosts and Scenarios

BSI Host Countries	TTX Year	Natural Hazards	Technical: Accidental	Technical: Deliberate use of CBRNE				
				Chem	Bio	Radiological	Nuclear	High Yield Explosives
Romania	TOMIS 2005				Variola			
Russia								
Bulgaria								
Georgia	Albatross 2007		Oil terminal explosion, fire, and spill	Sarin				Dimethylhydrazine (rocket fuel in train car, intentionally ignited)
Moldova	2008							
Turkey								
Ukraine								

Georgian-hosted Albatross 2007 continued to build on the foundation established by Romania in 2005 for greater cooperation and coordination in the realm of disaster response in the Black Sea region. BSI sponsors and the littoral nations have taken the initial steps for activity in 2008 and should continue to push forward in this highly beneficial security-building activity, branching out with different hosts and taking on new challenging scenarios over the coming years.

APPENDIX A

ACRONYMS

AAR	After Action Report
ADRC	Asian Disaster Reduction Center
Albatross 07	Albatross 2007
AN	Affected Nation
BLACKSEAFOR	Black Sea Naval Task Force
BSEC	Black Sea Economic Cooperation
BSI	Black Sea Initiative
BSRCP	Black Sea Regional Contingency Plan
CBRNE	Chemical, Biological, Radiological, Nuclear and High Yield Explosives
CDC	U.S. Centers for Disease Control and Prevention
CMEP	Civil-Military Emergency Preparedness
CMEP-C SEE	CMEP Council of South Eastern Europe
CWA	Chemical Weapons Agent
CWC	Chemical Weapons Convention
DC	District of Columbia
DoD	Department of Defense
EADRCC	Euro-Atlantic Disaster Response Coordination Center
EAPC	Euro-Atlantic Partnership Council
ECG	Exercise Control Group
ED	Exercise Design
EOC	Emergency Operations Center (see also NEOC)
EU	European Union
EU-MIC	EU Monitoring and Information Center
FEMA	Federal Emergency Management Agency
FPC	Final Planning Conference
FY08	Financial Year 2008
GIS	Geographic Information Systems
HAZMAT	Hazardous Material

HQDA	Headquarters Department of the Army
HN	Host Nation
ICC	In-Country Coordinator (PIMs)
IDA	Institute for Defense Analyses
IFRC	International Federation of the Red Cross and Red Crescent
IO	International Organization
IPC	Initial Planning Conference
IPM	Initial Planning Meeting
IT	Information Technology
LEMA	Local Emergency Management Agency
MCDA	Military-Civil Defense Assets
MFA	Ministry of Foreign Affairs
MOH	Ministry of Health
MPC	Main Planning Conference
MPIWG	Media and Public Information Working Group
MRCC	Maritime Rescue Coordination Center (Republic of Georgia)
MSEL	Master Scenario Events List
NATO	North Atlantic Treaty Organization
NEOC	National Emergency Operation Centers
NGO	Non-Governmental Organization
NRP	National Response Plans
OPCW	Organization for the Prohibition of Chemical Weapons
OCHA	Office of Coordination for Humanitarian Assistance
OSCE	Office for Security and Cooperation in Europe
PEWG	Planning and Exercises Working Group
PfP	Partnership for Peace
PIMS	Partnership for Peace Information Management System
POC	Point of Contact
RFI	Request for Information
RW	Real World
SCEPC	Senior Civil Emergency Planning Committee
SEDM	South East Europe Defense Ministerial
SEE	South Eastern Europe
SITREP	Situation Report
SPWG	Standards and Procedures Working Group
STARTEX	Start of the Exercise

TIC	Toxic Industrial Chemical
TOMIS 05	TOMIS International 2005
TTX	Table Top Exercise
UN	United Nations
UNDAC	United Nations Disaster Assessment and Coordination
UN-OCHA	United Nations – Office of Coordination for Humanitarian Assistance
US	United States
USA	U.S. Army
USACE	U.S. Army Corps of Engineers
USG	U.S. Government
VIP	Very Important Persons
WG	Working Group
WHO	World Health Organization
WMD	Weapons of Mass Destruction

GIS After Action Report
Albatross 2007
Batumi, Georgia
By GIS Facilitators, Mr. Seshu Vaddey and Mr. Doug Swanson, USACE

Item 1 – Proposal to Initiate a GIS Team Concept

During US disaster events FEMA requests GIS assistance from multiple government agencies who then respond and deploy to the Joint Field Office (JFO). The GIS Specialists are then co-located to work as a team on the GIS mission. This GIS Team concept could easily be incorporated into CMEP exercises and has a number of positive results. At the beginning of the TTX the impacted country would simply request “GIS Assistance” to physically deploy to their country. Each GIS Specialist would then go and sit at the impacted country’s table (EOR or LEMA) and work as a GIS team. This close working proximity would significantly increase International cooperation as well as GIS competence, as each member would learn from one another. Issues could be addressed jointly, drawing on participant strengths, eventually bringing everyone to a similar level of proficiency. Responding Nations could still request GIS support from their “deployed” GIS Specialist via messaging, ensuring Response Nation needs are still being addressed. (Proposed by Romania & Moldova GIS).

Item 2 – Software

Most BSI countries continue to use Arc View version 3.2 software products despite the continual release of newer versions. ESRI recently released version 9.2 in late 2006. The GIS team conducted an analysis of BSI participant’s levels of GIS experience based on observances during the TTX and incorporating cartographic output, basic geographic knowledge, software proficiency and production level.

Based on this analysis, the GIS Team recommends maintaining the use and requirement of the latest version of ArcMap, currently version 9.2, for all CMEP related activities. A GIS training plan tailored to individual country needs could ensure future standardization.

Item 3 – Albatross 07 Training

Training sessions prior to the TTX focused on two main principals: GIS data creation and GIS as an aid to decision making. Because the acquisition of GIS data is often the most expensive facet of GIS operation, providing countries with a means to create data from open source material affords them the ability to assemble a reasonable amount of GIS data. Though no measurable standard currently exists for acceptable amounts or volumes of GIS data, some common GIS datasets are often expected.

The primary function of GIS is to aid decision making. A better understanding of cartographic technique enables participants to better convey situational awareness, giving decision makers a clear picture of events. This understanding is evident in the map products produced by the BSI

countries during the TTX. These maps can be seen on the Albatross BSI 2007 CD provided to each attendee, under the GIS directory in the Map Products folder.

Georgia has invested money in acquiring geospatial data that was usable in the previous version of the GIS software. For some reason, they were unable to use the data in the latest version of the software along with other data. Research by the GIS specialists from the U.S. was able to determine that the reason was due to undefined Coordinate Systems. They were able to determine that the coordinate system of all the data is 'Projected: Pulkovo 1942 with Central Meridian of 45E'. Bringing this knowledge back to Georgia proved to be invaluable and significantly helped them during the TTX and will allow the Georgians to more readily adapt the newer GIS software.

Item 4 – GIS Training / Certification Program (for future use)

As the GIS experience level in participating countries continues to grow, there is a growing need to gauge or measure the progress of training. The development of a structured GIS training program with certification levels would make it easier to monitor the effectiveness of the training program and assess the available talent of GIS specialists in each country.

A preliminary draft of a GIS training / certification program is currently being worked on by Mr. Vaddey and Mr. Swanson and will be included as an addendum to this AAR when complete.

GIS DAILY RECAP

- 11 Feb – Data & Software Loading, Finalize Training Agenda, Team Meetings
- 12 Feb – Plenary Meeting, GIS Training
- 13 Feb – AM GIS Training, TTX Mod 1
- 14 Feb – TTX Mod 2 & 3
- 15 Feb – TTX Review, GIS Summary Presentation

**“Albatross TTX 2006/7”
EXERCISE GUIDE OUTLINE**

**Exercise Guide “Albatross 2006/7”: Responding to an Oil, Hazardous
Material/Toxic Industrial Chemical, or Chemical Weapons/Agent Release Incident**

- I. Introduction**
- II. Objectives**
- III. Guide Overview**
- IV. Oil, Hazardous Material/Toxic Industrial Chemicals, and Chemical
Weapons - Incident Response Format**

**Appendix A - Overview Oil, Hazardous Materials/Toxic Industrial
Chemicals, Chemical Weapons and International Protocols
for Reporting and Responding**

**Appendix A-1 - Chemical Incidents Decision Matrix: Assessment and
Notification**

Appendix A-2 - Oil: Characteristics and Response

**Appendix A-3 - Hazardous Materials/Toxic Industrial Chemicals:
Characteristics and Response**

Appendix A-4 - Chemical Weapons: Characteristics and Response

Appendix B - Glossary, Abbreviations, and Acronyms

Appendix C - Exercise Messages: Standard Message Formats

C-1 Notification

C-2 Request for Assistance

C-3 Offer of Assistance

C-4 Acceptance of Assistance

C-5 Coordination

C-6 Situation Report (SITREP)

C-7 OPCW Request for Assistance

Appendix D - Chemical Containment and Decontamination Protocol

Appendix E - Model International Customs Agreement

Appendix F - Guidelines for Emergency Response

Appendix G - Public Information Planning Guidance

Appendix H - Black Sea National Points of Contact

Appendix I - Article X/Chemical Weapons Convention

Appendix J - Guide to Use of GIS in Disaster Response

**(Disclaimer: This guide which is a compendium of References for Emergency
Response to Oil, Hazardous Materials, Chemical/Chemical release incidents is
drafted by the Institute for Defense Analyses with inputs from the Black Sea
Initiative participating nations as an Exercise Guide for use during the Albatross 07
TTX.)**

Exercise Guide – “Albatross 2006/7”
Responding to an Oil, Hazardous Material/Toxic Industrial Chemical
or Chemical Weapons/Agent Release Incident

I. Introduction

The Black Sea Initiative (BSI), began in October 2004 in Varna, Bulgaria (based upon discussions in Wiesbaden, Germany in August 2004) to support table top exercises for the littoral states of the Black Sea. The BSI focus is consequence management for emergency planning for natural and manmade disasters, including those caused by Weapons of Mass Destruction (WMD) or Chemical, Biological, Radiological, Nuclear, and High Yield Explosives (CBRNE) that threaten the Black Sea commercial ports and surrounding populations.

BSI is not intended to be a new organization, but rather an activity to support existing Black Sea regional cooperation focused on consequence management activities. BSI will work in concert with regional and international fora like the Black Sea Economic Cooperation (BSEC) initiative, Black Sea Naval Cooperation Task Group (BLACKSEAFOR), the United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), the Euro-Atlantic Disaster Response Coordination Centre (EADRCC), and other relevant Intergovernmental Organizations such as the World Health Organization (WHO), and the Organisation for the Prohibition of Chemical Weapons (OPCW). BSI supports the responsibilities of littoral states as outlined in the: Moscow Communiqué of 7 July 2004 (to counter threats, risks and challenges in the Black Sea).

Three Black Sea nations, Romania, Bulgaria, and Turkey, have been key players in U.S. led Civil-Military Emergency Preparedness (CMEP) activities, began in 1994 to support the Partnership-for-Peace program. A series of CMEP workshops started in South Eastern Europe in 1998, which fostered national, regional, and international civil-military cooperation in the area of emergency planning. BSI builds upon this experience, focusing on the Black Sea region with a series of consequence management tabletop exercises.

BSI's participating states agreed in Varna that Romania would host a Table Top Exercise (TTX) – Tomis International 2005 – in Constanta, Romania in September 2005. Tomis International 2005 was the first in the BSI series of tabletop exercises and featured a smallpox bio-terrorism scenario (the source of agent and pursuit of terrorists were not included in the TTX scenario). Following TOMIS, the Republic of Georgia volunteered

to host the second BSI TTX, Albatross 2006/7 which will feature a scenario that includes the release of oil, hazardous materials and chemical warfare agents. The “Tomis After Action Report: Black Sea Initiative Table Top Exercise Constanta, Romania 13-16 September 2005,” dated February 2006 was produced by the Institute for Defense Analyses and distributed to the BSI nations prior to the BSI Albatross 2006 TTX Initial Planning Conference (IPC). Georgia used the recommendations from the TOMIS AAR to help guide planning and preparation for the TTX.

The BSI Orientation and Initial Planning Conference (IPC) for Albatross 2006 was held July 17-21 in Wiesbaden, Germany to prepare for the TTX to be hosted by the Republic of Georgia in February 2007.

The BSI Orientation held July 17-19, included presentations by USACE, the (U.S. State of) Georgia Army National Guard, IDA, and the Republic of Georgia. Five of the seven invited Black Sea littoral nations attended the IPC, which was held July 20-21 (Georgia, Moldova, Romania, Turkey, Ukraine attended, Bulgaria and Russia were not able to attend). The IPC featured briefings by USACE, Republic of Georgia, IDA, NATO Euro-Atlantic Disaster Response Coordination Centre (EADRCC), the Organisation for the Prohibition of Chemical Weapons (OPCW) and Ukraine.

At both the Orientation and the IPC, the senior representative from the Republic of Georgia briefed their national objectives and proposed a draft scenario including the way ahead for the Table Top Exercise. Georgia decided that the Albatross TTX scenario would feature three events requiring international/regional assistance:

1. Oil terminal explosion in the Port of Batumi: resulting in a large fire and oil spill into the harbor,
2. Train wreck caused by a terrorist explosion of a train loaded with rocket fuel, which releases a toxic plume in a tourist area; and
3. Suspected chemical weapon release in Batumi, investigation of possible release, contamination.

II. Objectives:

In support of BSI objectives, the purpose of the BSI Table Top Exercise “Albatross 2006/7”, is to promote inter-ministerial and international cooperation in mitigation and emergency planning in the Black Sea littoral nations by:

- Supporting and promoting existing international, regional and national structures and standards for response to threats to populations, including natural/man-made disasters and terrorist incidents,

- Applying the internationally agreed policies and standards, adopted by UN-OCHA and the NATO Senior Civil Emergency Planning Committee (SCEPC), and other international bodies as appropriate,
- Assisting EAPC nations in developing emergency management Geographic Information System (GIS) experience as well as spatial databases and Internet tools to assist in emergency planning and response
- Promoting regional data contributions to and use of the CMEP Black Sea Viewer and related geospatial tools.

The purpose of this “Guide” is to provide exercise participants representing experts and decision-makers at National Emergency Operation Centers (NEOCs) with a ready reference for response to the oil, hazardous material/toxic industrial chemical or chemical weapons release incidents represented in the TTX scenario. While the scenario is fictional, this TTX is intended to exercise existing national response plans and enable participants to test the application of regional and international response protocols as well. A key outcome of the TTX will be the evaluation of those response plans and protocols with an eye toward improving capacities to respond to the full spectrum of disasters.

III. Guide Overview

The sections below and the appendices that follow are key reference tools for the play of the exercise, which, either identify a process or protocols for response, or direct responders to the appropriate reference material for guidance. This section will outline the various steps following the accidental/intentional release of oil, hazardous materials/toxic industrial chemicals (to include chemical weapons/agents) into the environment. Information on oil, hazardous materials/toxic industrial chemicals, chemical agents/weapons and protocols for reporting and response to an incident involving such materials/substances can be found in Appendix A, Appendices A-2 through A-4, while a Matrix at A-1 will support decision making in reporting and responding to a specific chemical incident. Definitions of terminology and a guide to abbreviations and acronyms can be found listed in Appendix B. To facilitate exercise play, exercise message formats based on EADRCC standards, as well as notional OPCW

notification/ reporting message information are listed and explained at Appendix C, C1-C7. These formats are available as templates in the exercise Webmail communications tool described during TTX training. Appendix D provides a notional decision matrix for requesting international assistance in containment and decontamination, which the participants may use as a guide during the TTX. A Model International Customs Agreement at Appendix E supports the rapid deployment of response units, personnel, equipment, and supplies to the affected nation. A set of Guidelines for Emergency Response developed and recommended by past CMEP participants is located at Appendix F and Public Information Guidelines prepared by the BSI Media (Public Information and International Relations) Working Group is presented at Appendix G. Appendix H contains a list of Black Sea National Points of Contact (POC) identified by the Euro Atlantic Disaster Response Coordination Centre (EADRCC), as well as, the national authorities in the respective BSI nations who serve as focal points for interacting with the Technical Secretariat/OPCW. These Points of Contact are a useful reference for real-world contingencies. For TTX purposes, fictional exercise contact email addresses will be utilized. At Appendix I is a copy of Article X of the Chemical Weapons Convention (CWC), which lays out the relevant provisions on Assistance and Protection in case of use or threat of use of chemical weapons. Appendix J includes references to the use of GIS and geo-spatial information to support disaster response.

IV Oil, Hazardous Material/Toxic Industrial Chemicals, and Chemical Weapons/Agent-Incident Response Format

The following section describes briefly the different steps to be taken by national authorities to mitigate the release of oil and hazardous materials (including chemical warfare agents), from response at the national level through to request for assistance of the international community. This is illustrated and described in Appendix A-1, which provides a schematic for decision-making regarding the incident, reporting issues, and regarding the National Response capabilities to mitigate the incident. Appendices A-2 thru A-4 provide information on characteristics and response methods for specific types of oil, hazardous materials/toxic industrial chemicals, and chemical weapons.

A. National Response Measures

1. Detection – National Response Plans include comprehensive measures to monitor for any threat or accidental/deliberate release of oil, hazardous material/toxic industrial chemicals, and chemical warfare agents that could cause a catastrophic national or international emergency. The first indication of such an occurrence would probably be detection by the local authorities (first responders) through a monitoring surveillance process. At the first detection of a chemical incident, the local authorities would activate their available assets to mitigate the consequences of the incident and at the same time activate the warning/alert mechanism to inform the affected population. Should the incident exceed their immediate capabilities, local authorities would alert national authorities providing all information regarding the occurrence such as time and location of occurrence, type of material (oil, hazmat, chemicals/chemical warfare agents) released/used (if known), specific effects to population and infrastructure, size of affected population and area, atmospheric conditions in the affected area, assistance assets required and any other pertinent information to enable authorities to assess the situation. National authorities would then assess the situation to determine their national capabilities to mitigate the incident. Appendix A-1 provides a step-by-step decision matrix for determining when to report and to whom, while A-2 provides characteristics and references for response to oil spills, A-3 and A-4 provide characteristics and response references for selected hazardous materials/toxic industrial chemicals and chemical weapons/agents.

2. Identification – Rapid identification of the hazardous materials or chemicals/chemical warfare agents is critical for effective consequence management procedures, e.g. medical response to, and containment and decontamination of the affected area. (Appendix A-3 and A-4 provide references on the characteristics of these materials/agents.).

3. Containment and Decontamination – Containment activities can include securing affected areas and containing or restricting the movement of possibly affected population due to chemical contamination or existence of hazardous agents. Mortuary requirements

are also critical to resolution of public health issues that may arise from the release of toxic chemicals. Appendix D, Containment and Decontamination Protocol provides a decision matrix and pertinent information to assist containment and decontamination response at local levels.

As outlined in the decision process matrices in Appendices A-1 and D, national level assessments of the situation, informed by the inputs of local authorities, may indicate a need to request assistance from the international community. Part B below provides guidance for such requests.

B. Request for International Assistance

If the scale or potential scope of the disaster exceeds the national capacities to mitigate the consequences of the chemical related incident, nations may request assistance from the international community. Nations may choose to request such assistance based upon bilateral agreements with neighboring countries or in accordance with international protocols for disaster assistance. A table of BSI member state bilateral agreements for disaster assistance appears in Appendix F, Guidelines for Emergency Response.

An oil spill or hazardous chemical incident, which exceeds the affected nation's ability to respond, necessitates national and international notification and reporting as well as international requests for assistance.

International agreements, such as with the International Maritime Organization (IMO) and bilateral agreements between BSI Nations, require reporting oil spills that may extend across borders. Incidents involving chemicals which are not identified by the Chemical Weapons Convention (CWC) as chemical weapons should be reported to EADRCC. Proposed formats for regional and international reporting are taken from the EADRCC Handbook (App. C shows the modified EADRCC message formats used in CMEP and BSI exercises). The CWC provides for a viable assistance mechanism to any State Party to the CWC that is attacked or is threatened with chemical weapons. It should be noted that all BSI nations have ratified the Chemical Weapons Convention, which provides, inter alia, the right to request, subject to the procedures set forth in paragraphs 9, 10 and 11 of Article X of the CWC, and to receive assistance and protection against

the use or threat of use of chemical weapons as laid out under paragraph 8 of the same Article. (Appendix I provides details of Article X of the Chemical Weapons Convention.)

Information regarding notification/reporting issues pertaining to a request for Assistance and Protection under Article X/CWC is listed in the draft OPCW Reporting information (App. C, C-7: OPCW Reporting Information format is derived from Verification Annex Part XI of the CWC), and should be included on the request for assistance message that is submitted to the Technical Secretariat of the OPCW. In real emergencies, this information is conveyed by nations to the OPCW in the most effective manner.

C. Coordination, Command, and Control – Coordination, Command, and Control in response to a chemical/CW emergency are critical to containing the incident. The affected nation must bring to bear relevant assets from Emergency Management, Law Enforcement, and Public Health, and include Public Information, Liaisons, Administration, Finance, Plans, Operations, and Logistics support.

The affected nation must further coordinate and cooperate with International Organisations and neighbours should the incident overwhelm their capacity to respond, or should the incident have potential significant regional or international impact (such as oil spills) to ensure all available assets are brought to the aid of their affected population. Effective on-site coordination and cooperation between national and international units is crucial for the effectiveness of the overall operation. Thus, the procedures developed by the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) as well as other international coordinating bodies for such contingencies should be followed.

D. Public Information – It is important to have a Public Information Plan available to guide the dissemination of information regarding the incident to the public while maintaining their confidence and support to do what is necessary to contain the incident particularly when WMD are involved. Some guidelines for Public Information Plans are presented in Appendix G.

Appendix A: Overview Oil, Hazardous Materials/Toxic Industrial Chemicals, Chemical Weapons/Agents, and International Protocols for Reporting and Responding

Appendix A includes four subsections (A1-A4), which reference oil incidents, hazardous materials/toxic industrial chemicals and their properties, as well as, the current international protocols involving chemical weapons/agents incidents. Appendix A-1 is a Chemical Incident Decision Matrix, developed for this exercise. This matrix assists national authorities in determining proper chemical incident reporting requirements, and describes international reporting protocols under the Chemical Weapons Convention (CWC), and Euro Atlantic Disaster Response Coordination Centre (EADRCC) the formats of which are included Appendix C. It is proposed that the Chemical Incident Decision Matrix (A-1) be used for the Albatross 2006/7 TTX. Appendix A-2 identifies the characteristics of oil and response capabilities, while A-3 identifies hazardous materials and toxic chemicals, and A-4 identifies chemical weapons/agents that could pose serious public hazards, and as well be used in a terrorist act.

The following definitions serve to distinguish the materials referenced in the TTX scenario as well as in this Exercise Guide, to include oil, hazardous materials, toxic industrial materials, and chemical weapons/agents.

Oil extracted from the earth in its natural form is known as petroleum or crude oil. Although crude oil is an extremely versatile and valuable resource, it must be processed through complex refining procedures to yield more useful products. Oil, with its unique physical structure, is used to satisfy the bulk of the world's energy and production needs. Therefore, the drilling, extraction, reprocessing, and transportation of petroleum and its derivatives are fundamental to the survival the world economy. Because of the sheer volume of oil extracted on daily basis and the need to move the massive quantities around the world cheaply and efficiently, oil is primarily distributed by sea. Maritime transportation accounts for roughly two-thirds of yearly oil shipments while the remainder is moved by rail, truck, or pipeline. Huge tankers ship millions of crude oil barrels to refineries and ports worldwide. The chemical structure of oil, while unique and versatile, can also be highly volatile if it is not managed with care.

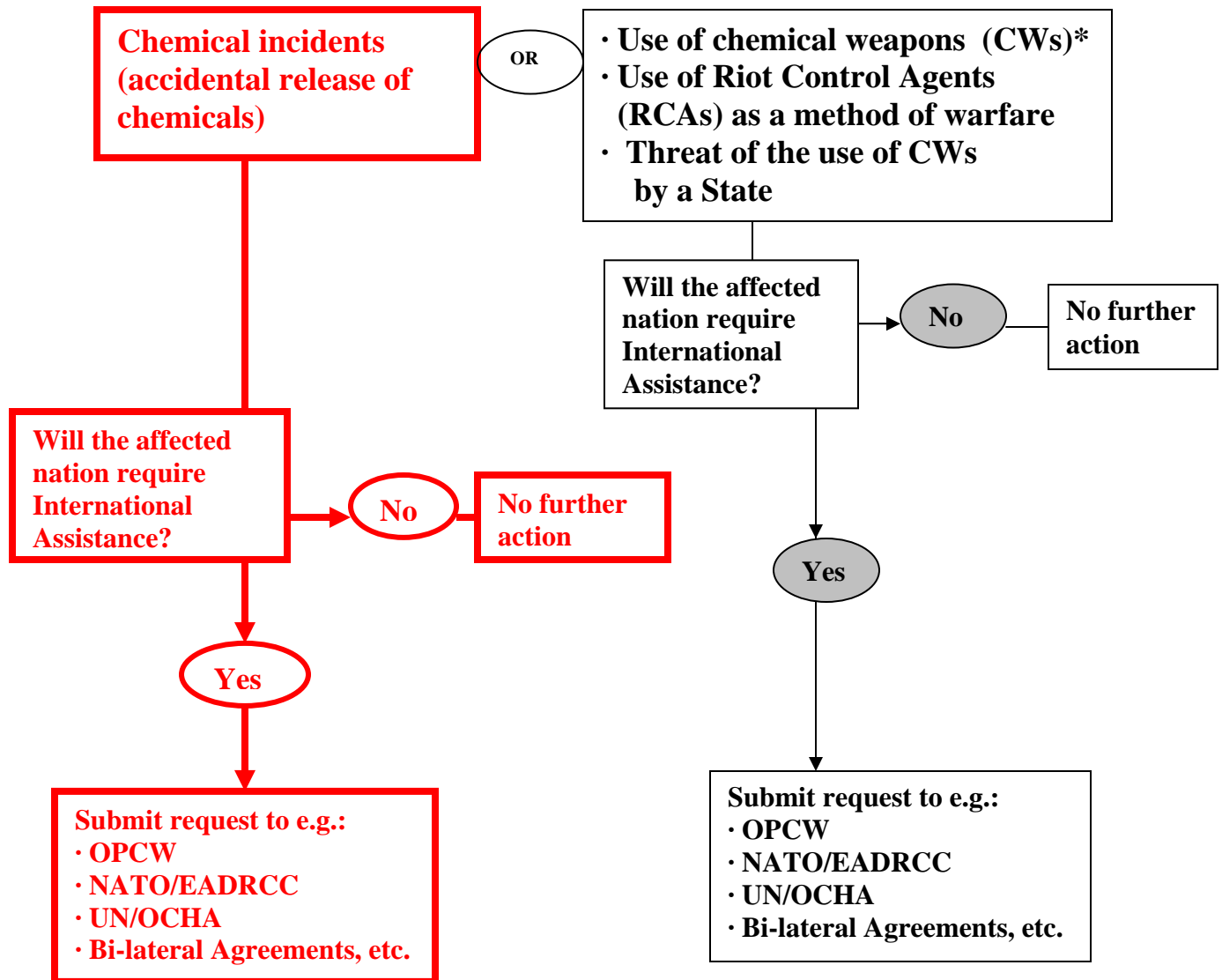
United Nations classification of **Hazardous Materials** as detailed in A-3, include all classes and schedules of chemicals. These materials can be poisonous, flammable, explosive, carcinogenic, and can pose a significant risk to human health, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Although petroleum is considered a hazardous material, other chemicals used in the processing crude oil, if they are mishandled, can pose even greater risks to human health and the environment. Regardless of their use, these chemicals are a serious danger if spilled or ignited due to their inherent chemical volatility. A chart at Appendix A-2 distinguishes oil from hazardous materials.

A-3 addresses **Toxic Industrial Chemicals** (TICs) and their characteristics. TICs are a key component of industrial society. According to the US Army Center for Health Promotion and Preventive Medicine, the term ‘toxic industrial chemicals (TICs) refer to a variety of chemicals used by industry in various processes, created by industry for various purposes, and released to the soil, water, or air by industrious by-product of either. These chemicals travel through ports, railroads, and highways in large, unprotected quantities. Toxic industrial chemicals may pose a risk when they are stored in a single location. An act of sabotage or an accident could result in a large release into the air that could harm the health of humans and animals nearby or downwind of the release. The large array of toxic chemicals is outlined in A-3 with detailed information and response guidelines for the accidental or deliberate use of such chemicals.

A-4 identifies a number of **Chemical Warfare Agents**, also referred to in the guide as chemical weapons/agents, which could be used by terrorists in a deliberate chemical release incident. This appendix indicates appropriate response strategies for these agents.

The information included in A-1 through A-4 provides valuable information to support initial response plans, as well as reporting and information sharing between national and international authorities relating to incidents involving oil, hazardous materials/toxic industrial chemicals, and chemical weapons and/or agents.

Appendix A-1: Chemical Incident Decision Matrix: Assessment and Notification



*** Chemical Weapons as defined by Article II/Chemical Weapons Convention (CWC), this involves any deliberate release of chemicals targeted against human or animals with the purpose to cause death, incapacitation, or permanent harm due to the toxic properties of the chemical released. Request for Assistance protocol illustrated here per guidelines under Article X of the CWC.**

Appendix A-2: Oil Characteristics and Response

This appendix provides a reference to identify the risks associated with oil spills as well as those measures required to mitigate the consequences of incidents involving oil spills, whether deliberate or accidental. An incident involving oil could have serious medical, environmental, and economic implications. This appendix focuses on the characteristics of oil spillage and response guidance for such an incident.

The Albatross scenario includes an incident, which causes an oil spill near a port city. Information included in this appendix explains characteristics of oil, differentiates oil from hazardous materials, and provides oil spill response information. Furthermore, reference to international agreements and guidelines as well as United States national response procedures are included in this guide, to provide exercise participants with additional background materials relevant to the TTX scenario. Finally, summaries of modeling tools and databases are provided as a reference for TTX participants, which could be shared with decision-makers to enhance real-world preparedness.

Characteristics of Oil and its differences from Hazardous Materials

Oil

As mentioned in Appendix A, oil must be reprocessed through a complex international refining process to yield its more useful products. This process necessitates the movement of massive quantities of crude oil, mainly by sea to refineries and ports worldwide. The chemical structure of oil, while unique and versatile, can also be highly volatile if it is not managed with care. Finally, oil accounts for fundamental products integral to the survival the world economy.

Hazardous Materials

Hazardous materials encompass a broad array of substances that can be poisonous, flammable, explosive, or carcinogenic or that pose a significant risk to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Petroleum is considered a hazardous material, uses and produces other chemicals in the refining process, which can pose great risks to human health and the environment if they are mishandled. Regardless of their use, these chemicals are a serious danger if spilled or ignited due to their inherent chemical volatility. The United Nations Economic Commission for Europe has developed a classification system for these hazardous materials, see A-3 for the enumeration of these materials.

The following chart developed by the United States Coast Guard (USCG), Baltimore Sector in Contingency Plan, "7000 Hazardous Substances," outlines basic differences between Oil and Hazardous Material Incident Responses. These characteristics are very important for response efforts.

Issue	Oil	Hazardous Materials
Number of Substances	- Few (crude, gasoline, diesel, butane, etc.)	- Several hundred
Typical Spill Volume	- Large	- Small
Detection	- Visible	- Often invisible
Human Risk	- Low vapor hazard, some dermal hazards	- High vapor, high contact hazard
Public Perceptions of Risk with a Serious Incident	- Low - Familiar scenario - Relatively safe for responders - Mainly an environmental threat	- High - Complex, unknown scenario - Danger for responders is more significant - Public health and environment are threatened
Emergency Response Priorities	- Protect the environment - Insure public health	- Prevent escalation - Guarantee public health - Protect death/injury to first responders
Emergency Response Strategy	- Mobilize response and inform public - Contain and recover the spilled petroleum	- Secure the volatile source - Evacuate the public or shelter in place to minimize exposure - Remove the hazardous substance - Continue monitoring the area

Types of Oil

Oil is thought of as being a single substance, but there are actually many different kinds of oil. Kinds of oil differ from each other in their viscosity, volatility, and toxicity. Viscosity refers to oil's resistance to flow. Volatility refers to how quickly the oil evaporates into the air. Toxicity refers to how toxic, or poisonous, the oil is to either people or other organisms. When spilled, the various types of oil can affect the environment differently. They also differ in how hard they are to clean up. Oil spill responders group oil into four basic types. A list of those four types follows, along with a general summary of how each type can affect shorelines.

Type 1: Very Light Oils (Jet Fuels, Gasoline)

Highly volatile (should evaporate within 1-2 days).

High concentrations of toxic (soluble) compounds.
Localized, severe impacts to water column and intertidal resources.
No cleanup possible.

Type 2: Light Oils (Diesel, No. 2 Fuel Oil, Light Crudes)

Moderately volatile; will leave residue (up to one-third of spill amount) after a few days.
Moderate concentrations of toxic (soluble) compounds.
Will "oil" intertidal resources with long-term contamination potential.
Cleanup can be very effective.

Type 3: Medium Oils (Most Crude Oils)

About one-third will evaporate within 24 hours.
Oil contamination of intertidal areas can be severe and long-term.
Oil impacts to waterfowl and fur-bearing mammals can be severe.
Cleanup most effective if conducted quickly.

Type 4: Heavy Oils (Heavy Crude Oils, No. 6 Fuel Oil, Bunker C)

Heavy oils with little or no evaporation or dissolution.
Heavy contamination of intertidal areas likely.
Severe impacts to waterfowl and fur-bearing mammals (coating and ingestion).
Long-term contamination of sediments possible.
Weathers very slowly.
Shoreline cleanup difficult under all conditions.

International Maritime Organization (IMO) – <http://www.imo.org>

As the UN's regulatory agency for the maritime activities, the IMO is responsible for monitoring shipping and protecting the environment. The IMO formally was established in 1948 as an effort to foster greater international cooperation on maritime sector activities after the creation of the UN in 1945. The establishing convention of the IMO, though, was not officially entered into force until 1958, and the organization's administrative activities began shortly thereafter. Safety has been the primary concern of the IMO, although its mandate was broadly to create standard practices for international trade, establish safety regulations, and control pollution. Various conventions and protocols have been passed by the IMO and ratified by Member States to reduce or eliminate risks to people and the environment.

Summary of IMO Conventions Relevant to Oil and Maritime Security

a. International Convention for the Safety of Life at Sea (SOLAS), 1974

This convention lists requirements and standards to protect passengers, crews, and surrounding bystanders from hazards at sea. Specifications for vessels are detailed to protect the cargo from being discharged or igniting. Relating to oil, additional limits were placed on the largest crude oil tankers to reduce some of their volatility.

b. International Convention on Maritime Search and Rescue (SAR), 1979

This convention sets forth measures to establish a rescue coordination center during a disaster for the purpose of saving individuals involved in an accident at sea. It also outlines operating procedures for emergencies, alerts, or SAR operations.

c. International Convention for the Suppression of Unlawful Acts (SUA) Against the Safety of Maritime Navigation, 1988

This convention discusses tactics to mitigate unlawful acts that threaten the security of ships or passengers and crews from hijackings, kidnapping, run aground, or blown up with explosives. Modification to safety practices included improving shore side and shipboard measures to protect vessels as well as develop international procedures for extraditing and handling criminals to deter future incidents.

Status of IMO Conventions for BSI Countries

	Bulgaria	Georgia	Moldova	Romania	Russian Federation	Turkey	Ukraine
IMO Convention 48	x	x		x	x	x	x
IMO amendments 91	x	x		x	x	x	
IMO amendments 93	x	x	x	x		x	x
SOLAS Convention 74	x	x		x			x
SOLAS Protocol 78	x	x		x			
SOLAS Protocol 88	x	x	x	x			
Stockholm Agreement 96				x	x	x	x
LOAD LINES Convention 66	x	x		x	x	x	x
LOAD LINES Protocol 88	x	x		x	x		
TONNAGE Convention 69	x	x	x	x	x	x	x
COREG Convention 72	x	x	x	x	x	x	x
CSC Convention 72	x	x		x			
CSC amendments 93							
SFV Protocol 93							
STCW Convention 78	x	x	x	x	x	x	x
STCW-F Convention 95				x	x	x	x
SAR Convention 79	x	x		x			
STP Agreement 71							
STP Protocol 73							
INMARSAT Convention 76	x			x	x	x	x
INMARSAT OA 76	x						
INMARSAT amendments 94	x			x	x	x	x
INMARSAT amendments 98	x				x		
FACILITATION Convention 65	x	x	x	x	x	x	x
MARPOL 73/78 (Annex I/II)	x	x	x	x	x	x	x
MARPOL 73/78 (Annex III)	x	x	x	x	x	x	x
MARPOL 73/78 (Annex IV)	x	x	x	x	x	x	x
MARPOL 73/78 (Annex V)	x	x	x	x	x	x	x
MARPOL Protocol 97 (Annex VI)	x						
London Convention 72				x	x	x	x
London Convention Protocol 96	x			x	x		x
INTERVENTION Convention 69	x			x	x		
INTERVENTION Protocol 73	x						
CLC Convention 69	x			p			
CLC Protocol 76	x	x	x	x	x	x	x
CLC Protocol 92	x	x					
FUND Convention 71							
FUND Protocol 76							
FUND Protocol 92	x			x	x	x	x
FUND Protocol 2003	x						
NUCLEAR Convention 71	x						
PAL Convention 74	x			x	x		x
PAL Protocol 76				x	x		
PAL Protocol 90							
PAL Protocol 02							
LLMC Convention 76	x			x			
LLMC Protocol 96				x			
SUA Convention 88	x	x	x	x	x	x	x
SUA Protocol 88	x	x	x	x	x	x	x
SALVAGE Convention 89	x	x	x	x	x	x	x
OPRC Convention 90	x	x		x			
HNS Convention 96				x			
OPRC/HNS 2000							
BUNKERS CONVENTION 01							
AMT FOR IING 01							

Source: IMO http://www.imo.org/includes/blastData.asp/doc_id=693/status.xls

Oil Incident References

Oil Spill Web <http://www.oil-spill-eb.com/oilspill/welcome.htm>

The purpose of the oil spill web is to enhance the further development of technology and knowledge within oil spill prevention, oil spill response or oil spill cleanup, and oil pollution remediation. The oil spill web aims to keep users up-dated with the latest oil spill response equipment developments and experiences. This website contains an online “Oil Spill Response Handbook” with references to marine oil spill response, high and extreme viscosity oil recovery and pump transfer, annular water injection techniques (core annular flow), viscous oil pumping systems, remote detection, in-situ burning, Orimulsion spill response, and dispersant spraying, as well as bioremediation and other offshore and onshore hydrocarbon pollution combat methods.

The handbook discusses the properties of oil spilled on land and at sea, indicating different threats, and response requirements. The following extracts on sea and land-based spill response considerations come from that handbook:

Oil Spills at Sea

Most of the oil that spills into water is crude oil. The spills are either due to natural leaking from the underground, as is the case off the coast of California, or due to human action in connection with exploration, production, or transportation of crude oil.

The behavior depends of the origin of the crude oil, as well as the environment that it is spilled into, i.e. water- and air temperature, wind and wave conditions. But in very general terms, the following will happen within hours:

1. Spreading: The oil spreads rapidly over a large area and breaks up in windrows, which are long and narrow slicks with the same orientation as the wind.
2. Evaporation: The spreading causes the lighter fractions of the oil to disappear rapidly, leaving back in the water only the heavier parts.
3. Emulsification: Wave action mixes water into the oil, forming a heavy and sticky water-in-oil emulsion, sometimes called chocolate mousse.
4. So, if you arrive at the spill site 10 to 20 hours after the spill, expecting to find something like the motor oil from your car, you may get a big surprise. And as if the heavy, sticky emulsion wasn't bad enough, you may in addition find it mixed with all types of floating debris, such as kelp, seaweed, wood, cans, rope, plastic, and more.

The described behavior of the spilled oil sets the demands for a successful oil spill response:

1. Minimal response time
2. Efficient and fast concentration of the widely spread oil
3. Skimmers and pumps which can handle high viscosity emulsion and debris
4. Appropriate temporary storage capability

(Options: Dispersant spraying may be used in the very early stages after the spill, provided permission has been granted by the authorities. In-situ burning may be an option to skimming).

It is relevant to mention that in some cases very light oil has been spilled in large amounts without significant visual impact. This is due to the fact that nearly all of the oil

has evaporated, and that the ocean has handled the rest by natural dispersion. Only in blow-out situations or if such light oil has been trapped in a harbor or in a bay, a fast response may be able to recover significant amounts of the oil.

According to the Oil Spill Handbook, light oils, while not as harmful when spilled at sea, can be quite volatile when spilled on land as it can penetrate the topsoil rapidly possibly contaminating ground water. The following extract from the handbook details oil spills on land.

Behavior of oil that has been spilled on land:

Light oil tends to penetrate the topsoil rapidly, thus seeping into the deeper ground bringing the groundwater at risk. Heavier oil only very slowly contaminates the soil, as its higher viscosity makes penetration difficult.

Depending on the viscosity, the spilled oil will more or less fast flow to the lower part of the landscape. Apart from this, spreading will not take place, so the evaporation of the lighter fractions of the oil will be limited. Further, there will be no emulsification with water. Therefore the spilled oil will not physically change very much, unless it is left on the ground for a longer period of time.

But the oil will mix with gravel, soil, and the present vegetation, which may result in difficulties during clean up.

The described behavior of the spilled oil sets the demands for a successful oil spill response:

1. Minimal response time, especially for spills involving light oil
2. Efficient and fast limitation of further spreading (dikes and ditches)
3. Skimmers or pumps which can handle debris and soil contaminated oil
4. Appropriate temporary storage capability

(Options: Certain biologically degradable detergents may successfully be used for fast flushing of the oil to the collection and recovery area. In-situ burning may - in a few special situations - be an option to recovery, pending permission).

Apart from the above-mentioned differences from marine spills, it is important to note, that land oil spills very often involve so called product oils. These are oils, which have been refined, and their performances (as for instance diesel-, hydraulic-, transmission-, or lubrication oils) have been improved by additives, of which some are extremely toxic and harmful to the environment.

Environmental Health and Safety Online-Response to Oil Spills. Another useful oil response website is the U.S.-based “Environmental Health and Safety on Line.” The site <http://www.ehso.com/oilspills.php> provides a compendium of information on oil spills with, “Everything You Need To Know”. This Environmental Health and Safety on Line (EHSO) site contains sections of what oil spills are, their potential effects on the environment, how they are cleaned up, and how various U.S. agencies prepare for spills before they happen.

The EHSO web site contains information regarding all aspects of oil spills and what to report and where and how to respond for U.S. based operations. (Euro-Atlantic

nations should report an oil spill disaster to the Euro-Atlantic Disaster Response Coordination Centre in the appropriate notification message format).

Specific Oil Spill Reporting information from the EHSO web site is as follows:

- Your name, location, organization, and telephone number,
- Name and address of the party responsible for the incident,
- Date and time of the incident,
- Location of the incident,
- Source and cause of the release or spill,
- Types of material(s) released or spilled,
- Quantity of materials released or spilled,
- Danger or threat posed by the release or spill,
- Number and types of injuries (if any),
- Weather conditions at the incident location,
- Other information that may help emergency personnel respond to the incident.

ITOPF <http://www.itopf.com/about.html> The International Tanker Owners Pollution Federation (ITOPF) is a non-profit making organization, which is involved in all aspects of preparing for and responding to ship-source spills of oil and chemicals in the marine environment. Although their response appears to be specifically for oil tanker spill incidents, their use of dispersants and methods of shoreline clean up in response to these incidents is helpful for response efforts for an oil terminal spill and fire scenario.

United Nations Environmental Program (UNEP)'s Global Marine Oil Pollution Information Gateway. UNEP's web-based gateway is an information clearinghouse of the *Global Programme of Action (GPA) for Protection of Marine Environment From Land-based Activities*. The Gateway contains a section on the Black Sea, with information regarding environmental anti-pollution efforts as well as mitigation and response to incidents including oil spills: <http://oils.gpa.unep.org/framework/region-5.htm>

U.S. National Oceanic and Atmospheric Administration (NOAA) – Emergency Responders and Responding to Oil Spills. This website contains links to alternative oil spill response methods used in marine environments as well as processes for developing incident specific response strategies.
[http://response.restoration.noaa.gov/type_topic_entry.php?RECORD_KEY%28entry_topic_type%29=entry_id,topic_id,type_id&entry_id\(entry_topic_type\)=343&topic_id\(entry_topic_type\)=1&type_id\(entry_topic_type\)=2](http://response.restoration.noaa.gov/type_topic_entry.php?RECORD_KEY%28entry_topic_type%29=entry_id,topic_id,type_id&entry_id(entry_topic_type)=343&topic_id(entry_topic_type)=1&type_id(entry_topic_type)=2)

Cooperation in Combating Pollution of the Black Sea Marine Environment. Realizing the need for close cooperation with competent international organizations based on a concerted regional approach for the protection and enhancement of the Black Sea, a Protocol on Cooperation in Combating Pollution of the Black Sea Marine Environment was adopted by the Black Sea Nations in 1994 and came in force in 1994 see Oil and other Harmful Substances in Emergency http://www.blacksea-commission.org/OfficialDocuments/Convention_iframe_main.htm

Appendix A-3: Hazardous Materials (HazMats) and Toxic Industrial Chemicals (TICs): Characteristics and Response

This appendix provides background information on the characteristics and definitions of hazardous materials and toxic industrial chemicals. This appendix will assist to identify hazardous materials (HazMats) and toxic industrial chemicals (TICs), their characteristics, and the proper response to the incidents of accidental or deliberate release of such substances. Although developed for the Albatross TTX, this Appendix contains reference materials that can support real world response.

Characteristics of Hazardous Materials -Toxic Industrial Chemicals (TICs)

As distinguished from oil in the preceding Appendix A-2, Hazardous Materials (HazMats), to include toxic industrial chemicals, are defined as substances that could be poisonous, flammable, explosive, or carcinogenic or pose a significant risk to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Many hazardous chemicals are used in industry (for example, chlorine, ammonia, and benzene) and identified as Toxic Industrial Chemicals (TICs) . Other chemicals are found in nature (for example, poisonous plants). Some could be made from everyday items such as household cleaners. These types of hazardous chemicals also could be obtained and used to harm people, or they could be accidentally released. The U.S. Centers for Disease Control and Prevention (CDC) has a reference website which identifies and provides characteristics of many hazardous chemicals as well as guidelines for response to chemical emergencies. <http://www.bt.cdc.gov/chemical/>

Toxic Industrial Chemicals

Toxic Industrial Chemicals refers to a variety of chemicals used by industry in various processes, created by industry for various purposes, or released to the soil, water, or air by industries as by product of either. Toxic industrial chemicals can cause death, temporary incapacitation, or permanent harm to humans or animals. Toxic Industrial Chemicals pose a greater risk when stored in large quantities in a single location where acts of sabotage, or an accidental release could affect large nearby or downwind populations. Refer to the following U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) website for further information on TICs. <http://www.osha.gov/SLTC/emergencypreparedness/guides/chemical.html>

Indicators of a possible HazMat or Toxic Industrial Chemical Incident

The following provide some indication that the release of a chemical agent has taken place.

- Dead animals/birds/fish - Not just an occasional road kills, but numerous animals (wild and domestic, small and large), birds, and fish in the same area,
- Lack of insect life - If normal insect activity (ground, air, and/or water) is missing, check the ground/water surface/shore line for dead insects. If near water, check for dead fish/aquatic birds,
- Unexplained odors Smells may range from fruity to flowery to sharp/pungent to garlic/ horseradish-like to bitter almonds/peach kernels to new mown hay. It is important to note that the particular odor is completely out of character with its surroundings,
- Unusual numbers of dying or sick people (mass casualties) - Health problems including nausea, disorientation, difficulty in breathing, convulsions, localized sweating, conjunctivitis (reddening of eyes/nerve agent symptoms), erythema (reddening of skin/vesicant symptoms) and death,
- Pattern of casualties - Casualties will likely be distributed downwind, or if indoors, by the air ventilation system,
- Blisters/rashes - Numerous individuals experiencing unexplained water-like blisters, weals (like bee stings), and/or rashes,
- Illness in confined area - Different casualty rates for people working indoors versus outdoors dependent on where the agent was released,
- Unusual liquid droplets - Numerous surfaces exhibit oily droplets/film; numerous water surfaces have an oily film. (No recent rain.),
- Different looking areas - Not just a patch of dead weeds, but trees, shrubs, bushes, food crops, and/or lawns that are dead, discolored, or withered. (No current drought.),
- Low-lying clouds or Low-lying cloud/fog-like condition that is not consistent with its surroundings,
- Unusual metal debris or unexplained bomb/munitions-like material, especially if it contains a liquid.

Emergency Response Guide

A quick reference for first response to TIC incidents is Transport Canada's Emergency Response Guidebook 2004 (ERG2004) <http://www.tc.gc.ca/canutec/en/guide/guide.htm>. The ERG2004 is primarily a guide to aid first responders in quickly identifying the specific or generic hazards of the material(s) involved in the incident, and protecting themselves and the general public during the initial response phase of the incident. ERG2004 can be used to quickly find information on various Toxic Industrial Chemicals and other chemical weapons.

The ERG2004 guidebook will assist responders in making initial decisions upon arriving at the scene of a hazardous materials (dangerous goods) incident. It should not be considered as a substitute for emergency response training, knowledge, or sound judgment. ERG2004 does not address all possible circumstances that may be associated with a hazardous material incident. It is primarily designed for use at a hazardous materials incident occurring on a highway or railroad. Be mindful that there may be limited value in its application at fixed facility locations.

The key features of the ERG2004 are:

- Identification numbers of the materials,
- Names of the materials,
- Placards that identify the type of material,
- Guide number: refers to potential hazards, public safety, emergency response,
- TIPAD: the table of Isolation and Protective Action Distance,
- Water reactive materials, which produce toxic gases, and
- Chemical warfare agents.

National Institute for Occupational Safety (NIOSH) Pocket Guide

Another reference that categorizes chemicals alphabetically is the U.S. National Institute for Occupational Safety <http://www.cdc.gov/niosh/topics/chemical.html>.

An additional reference is the NIOSH Pocket Guide of Chemical Hazards <http://www.cdc.gov/niosh/npg/>, which includes the following:

- Chemical names, synonyms, trade names, conversion factors, CAS, RTECS, and DOT numbers,
- NIOSH Recommended Exposure Limits (NIOSH RELs),
- Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs),
- NIOSH Immediate Dangerous to Life and Health values (NIOSH IDLHs),
- A physical description of the agent with chemical and physical properties,
- Measurement methods,
- Personal protection and sanitation recommendations,
- Respirator recommendations,
- Information on health hazards including route, symptoms, first aid, and target organ information.

International Chemical Safety Cards (ICSC)

The ICSCs are being developed to carry out and disseminate evaluations of the hazards posed by chemicals to human health and the environment. ICSCs are not legally binding documents, but consist of a series of standard phrases, mainly summarizing health and safety information collected, verified and peer reviewed by internationally recognized experts, taking into account advice from manufacturers and Poison Control Centers.

Example: How to find the ICSC for Dimethylhydrazine

1. acquire ICSC website click on <http://www.cdc.gov/niosh/ipcs/nicstart.html>
2. click on index list
3. click on "D" for Dimethylhydrazine
4. find Dimethylhydrazine
5. click on number block at left, and ICSC for Dimethylhydrazine will appear

The ICSC project is an undertaking of the International Program on Chemical Safety (IPCS). The project is being developed in the context of the cooperation between

the IPSC and the Commission of the European Communities. The IPSC is a joint activity of three cooperating International Organizations: namely the United Nations Environment Program (UNEP), the International Labor Office (ILO), and the World Health Organization (WHO).

The ICSC Card and the information that it contains are related to specific chemical substances and are basically concerned with the intrinsic hazards posed by that chemical. Downstream risks will vary according to how a substance is used. These cards cannot in practical terms address all problems that might occur in the multitude of possible work situations nor can it provide all the fine details needed when using a particular substance.

However, the Cards do offer a basic tool to supply the workers with information on the properties of the chemicals that they use. They can also be useful in the training of workers possibly undertaken by employers. ICSC Cards might be the principal information source in less developed areas or in small and medium size enterprises, as regards both management and workers. Important aspects of the ICSCs are that they are available in many different languages and are so-designed that room is reserved for the countries to enter information of national relevance.

The identification of the chemicals on the ICSC Cards is based on: the UN numbers, the Chemical Abstracts Service (CAS) number, and the Registry of Toxic Effects of Chemical Substances (RTECS/NIOSH) numbers. It is thought that the use of those three systems assures the most unambiguous method of identifying the chemical substances concerned, referring as it does to numbering systems that consider transportation matters, chemistry and occupational health.

Other Sources

Other possible information sources for HAZMAT and TIC response are the ALOHA, CAMEO, and MARPLOT systems which are tools that can be used to integrate digital mapping into response and resolution for chemical incidents. <http://www.epa.gov/ceppo/cameo/aloha.htm>

ALOHA ® - Areal Locations of Hazardous Atmospheres

ALOHA is an atmospheric dispersion model used for evaluating releases of hazardous chemical vapors. ALOHA allows the user to estimate the downwind dispersion of a chemical cloud based on the toxicological/physical characteristics of the released chemical, atmospheric conditions, and specific circumstances of the release. Graphical outputs include a "cloud footprint" that can be plotted on maps with MARPLOT to display the location of other facilities storing hazardous materials and vulnerable locations, such as hospitals and schools. Specific information about these locations can be extracted from CAMEO information modules to help make decisions about the degree of hazard posed.

CAMEO ® - The Database and Information Management

The original application, called CAMEO, contains a chemical database of over 6,000 hazardous chemicals, 80,000 synonyms, and product trade names. CAMEO provides a powerful search engine that allows users to find chemicals instantly. Each one is linked to chemical-specific information on fire and explosive hazards, health hazards, firefighting techniques, cleanup procedures, and protective clothing. CAMEO also contains basic information on facilities that store chemicals, on the inventory of chemicals at the facility (Tier II) and on emergency planning resources. Additionally, there are templates where users can store EPCRA information. CAMEO connects the planner or emergency responder with critical information to identify unknown substances during an incident.

MARPLOT ® - Mapping Applications for Response, Planning, and Local Operational Tasks

MARPLOT is a mapping application. It allows users to "see" their data (e.g., roads, facilities, schools, response assets), display this information on computer maps, and print the information on area maps. The areas contaminated by potential or actual chemical release scenarios also can be overlaid on the maps to determine potential impacts. The maps are created from the U.S. Bureau of Census TIGER/Line files and can be manipulated quickly to show possible hazard areas.

Overall response to the release of hazardous materials (toxic chemicals)

The Emergency Response Guide, the NIOSH Pocket Guide, and the International Chemical Safety Cards all address the measures to be taken should there be an incident regarding the release of hazardous material chemical substances and chemical weapons.

Appendix A-4: Chemical Weapons: Characteristics and Response

This appendix provides background material on characteristics and definitions of chemical weapons. This appendix will assist to identify chemical warfare agents (weapons/agents), and the proper response to the incidents of accidental or deliberate release of such substances. Although developed for the Albatross Exercise this appendix provides references useful for real world response.¹

Characteristics and Classifications of Chemical Weapons Agents

Chemical warfare, the use of chemical weapons agents, is the application of toxic chemicals with the intent to exploit their direct toxic effects on humans, plants, or animals for hostile purposes.²

Chemical weapons agents that are deployed against humans can be classified according to their physiological effects into four major categories: blister, blood, choking, and nerve agents. The specific types of effects that an agent will have on the body is dependent upon how the chemical is deployed and through which exposure pathway a person comes in contact with the chemical. Determination of the Classification of the agent is paramount in determining the proper response and treatment of casualties.

Although many chemical weapon agents are highly volatile, there are some like mustard and mustard lewisite that are not. Chemical weapon agents are either a liquid or gas at room temperature, or they are liquids that quickly evaporate when exposed to air. A chemical agent's **persistence** describes how long the chemical agent will remain in an area after it is released. **Non-persistent agents** are quite chemically volatile, however, lose their effectiveness, and quickly dissipate into ambient air. Even so, some non-persistent agents pose fairly substantial risk for percutaneous hazard from both vapor and liquid as well as through inhalation. Persistent agents have stronger resilience to natural and human decontamination procedures. Chemicals in this category do not easily change into gaseous forms, which allow these liquid agents to remain in a particular region for an extended period of time. And although these chemicals generally pose risks through contact exposure they also could cause a vapor hazard and have been shown to have capabilities to be reactivated to some extent by rain, and pose vapor hazards. A primary consideration for responding to a chemical weapons release is to understand the method of employment of the weapon, i.e. an explosive mustard device will generate much vapor.

Blister agents, also referred to as vesicants, cause burns, and blisters to the skin, respiratory track, mucous membranes, and eyes. These toxins are highly reactive and cause instantaneous cellular changes when combined with proteins, DNA, and other cellular components. Symptoms can appear immediately or develop from two to 24 hours after initial exposure. Although the common form of exposure for blister agents is

¹ Some material in this appendix is taken from research on the full spectrum of hazards conducted by the Institute for Defense Analyses.

² SIPRI. "Chemical Warfare." <http://cbw.sipri.se/index2.html>

dermal, other serious health problems occur to the lungs, via inhalation, or the gastrointestinal system, via ingestion. Typically, most forms of exposure are non-fatal; inhaling large concentrations, however, could be seriously life threatening.

Blood agents can cause a range of health problems ranging from mild tissue damage to instantaneous death depending on the concentration of the chemical exposure. These chemicals inhibit the flow of oxygen from the blood stream to the cells. With increased levels of exposure, oxygen and other essential nutrients fail to reach critical cells, and body functions begin to fail. Respiratory and cardiac systems typically break down first resulting in coma or death. Most blood agents are non-persistent—highly volatile, dissipating in open air. Thus, most exposure occurs through inhalation, although some dermal exposure is also possible.

Choking agents cause irritation in the bronchi, trachea, larynx, and nose. They are non-persistent toxins in gaseous form that are inhaled and primarily affect breathing functions. Symptoms of exposure typically include coughing, choking, nausea, and chest tightness. When exposed to high concentrations of choking agents, death can occur within one to two days. Pulmonary edema, an excessive fluid accumulation in the lungs and surrounding cavities, is the main effect and can be fatal if not contained. If treatment is successful, normal pulmonary functions will gradually return after two days with no long-term damage.

Nerve agents are a group of particularly toxic chemical warfare agents. They were developed just before and during World War II and are related chemically to the organophosphorous insecticides. The principle agents of this group are GA-Tabun GB-sarin, GD-soman, GF-cyclosarin, and VX-methylphosphonothioic acid. These extremely hazardous chemical weapons cause devastating effects and typically result in fatalities. They technically kill by causing asphyxiation, although the main effect is disruption of the nervous system, which in turn causes muscle failure. Nerve agents can be in liquid, gas, or aerosol forms; they enter the body primarily through inhalation, but ingestion or absorption through the skin is still possible. When taken in through the lungs, these toxins are immediately dispersed throughout the body and present the highest risk to survival. On a chemical level, nerve agents inhibit the break down of the neurotransmitters that are necessary for normal muscle function. Without normal levels of specific transmitters, serious and uncontrollable muscle spasms occur. If normal muscle function is not restored immediately, the muscle networks that control breathing and the heart cease functioning, and asphyxiation takes place.

Signs of an Attack

It may appear evident that a chemical attack has taken place, even without advanced detection devices in place to identify the type of agent released. There are several general factors that can be used to initially distinguish what type of attack has taken place. The following chart illustrates some differences.

Differentiation of Biological and Chemical Attack

Indicator	Chemical Attack	Biological Attack
Epidemiological features	<p>Unusual numbers of patients with very similar symptoms seeking care virtually simultaneously (especially with respiratory, ocular, cutaneous, or neurological symptoms, e.g. nausea, headache, eye pain, or irritation, disorientation difficulty with breathing convulsions and even sudden death).</p> <p>Cluster of patients arriving from a single locality</p> <p>Definite Pattern of symptoms clearly evident.</p>	<p>Rapidly increasing disease incidence over hours or days in a normally healthy population.</p> <p>Unusual increase in people seeking care, especially with fever, respiratory, or gastrointestinal complaints.</p> <p>Endemic disease rapidly emerging at an unusual time or in an unusual pattern.</p> <p>Unusual numbers of patients with rapidly fatal illness (agent dependant)</p> <p>Patients with relatively uncommon disease that has bioterrorism potential.</p>
Animal indicators	Sick or dying animals	Sick or dying animals
Devices, unusual liquid spray or vapor	<p>Suspicious devices or packages</p> <p>Droplets, oily film</p> <p>Unexplained odor</p> <p>Low clouds or fog unrelated to weather</p>	Suspicious devices or packages

As indicated by this chart the more obvious physical signs, such as an odor, liquid, or foggy gas cloud, coupled with unexplained symptoms of coughing, nausea, skin irritation, or disorientation are likely indicators that a chemical agent has been released. Observing animal behavior is also important as they can be affected at much lower

concentrations. Another sign of chemical release is the immediate onset of symptoms related to the agent, while biological agents generally start with non-specific flu-like symptoms.

Identification

Identification of the chemical weapon, using proper detection methods, should take place as soon as practically possible following release of the chemical weapon. In this process caution should be taken by first responders to always assume the highest level of protection possible until it is determined that that level of protection can be reduced. Choice of correct protective equipment, and correct behavior, may be decisive for rescue operations in chemical weapons contaminated environment. The national response plan should identify the necessary level of protection to be taken, the individual protection equipment to be worn, and how the levels of protection will be announced to the responders. In order to plan rescue operations, more detailed information on chemical weapons agents is necessary. Agent identification can be done to some extent by means of a combination of manual vapour detection (tickets and tubes) and detection paper. Information on an even higher reliability level will require more advanced detection equipment and possibly analysis of samples in a laboratory.

Detection of Chemical Weapons

Following is an overview of some methods for the detection of chemical warfare agents. (Source: A FOA Briefing Book on Chemical Weapons)

Detection implies that evidence is obtained on the types and quantities of chemical weapons agents in the area. The questions asked may be whether, for example, protective masks are required, whether body protection is necessary, if normal behavior should be modified in any special way, and whether equipment will require decontamination. Detection may be needed for several different purposes, e.g.,

- alarm,
- all-clear,
- verification and identification,
- mapping of ground contamination,
- mapping of decontamination requirement.

Different types of detection require different types of equipment and methods. In some cases we must determine whether the gas concentration in the air is at a dangerous level. In other situations, investigations are made of whether soil or equipment is contaminated with liquid agent, i.e., is dangerous to handle.

Some Detection Methods

- Detection Paper

Detection paper is based on certain dyes being soluble in chemical weapons agents. Normally, two dyes and one pH indicator are used, which are mixed with

cellulose fibers in a paper without special coloring (unbleached). When the paper absorbs a drop of chemical weapon agent, it dissolves one of the pigments. Mustard agent dissolves a red dye and nerve agent a yellow. In addition, VX causes the indicator to turn to blue, which together with the yellow will become green/green-black.

Detection paper can thus be used to distinguish between three different types of CW agents.

- Detection Tubes

The detection tube for mustard agent is a glass tube containing silica gel impregnated with a substrate (DB-3). Detection air is sucked through the tube using a special pump A developer is then added, and the result can be read-off. If the silica gel in the tube turns blue, then the vapor in the sample contains mustard agent.

- Detection Tickets

Detection tickets for nerve agents are used in a similar way. The ticket consists of two parts, one with enzyme-impregnated paper, and the other with substrate-impregnated paper. If the enzyme part of the ticket turns a weak blue color, nerve agent is not present in the air.

Developmental and Advanced Detection Methods

Development of detection methods today is mainly concentrated on instruments. New manual methods, e.g., for toxins (<http://www.opcw.org/resp/html/toxins.html>) may be developed but the development mainly concerns instruments for detection and monitoring. In some cases, instruments capable of both tasks are being constructed.

Several lines of development are presently being followed as regards detection principles. The most common line of development is some form of ion mobility detector IMS (Ion Mobility Spectroscopy). The Chemical Agent Monitor (CAM) also belongs to this group, as well as detectors for warning such as the Finnish M86 and the more recent M90.

Another principle used is flame photometry FPD (Flame Photometric Detector). A flame of hydrogen is allowed to burn the sample of air after which the colour of the flame is investigated by a photometer. In this way, the presence of phosphorus and sulphur can be demonstrated. Examples of instruments using this principle are the French monitor AP2C and Israeli combined detector and monitor CHASE.

A third principle is to use enzymes, as in the manual methods for nerve agent detection. Detectors operating on this principle have been developed in the United Kingdom, in the Netherlands and the former Soviet Union, among others.

Methods for long-range monitoring using optical methods (IR) are being developed in France and the U.S.A.

A research sector attracting great interest is the use of biologically active molecules as sensors. These biosensors are believed to have extremely great potential

and research is ongoing in several countries. The advantage of biosensors is that, at least in theory, they can be given the sensitivity and specificity desired. This is possible since the biosensor uses the same mechanisms that influence the human body when exposed to poisoning. A simple type of biosensor is the enzyme ticket.

A more general type of biosensor may also be useful in the early detection of potential threats. Instead of studying toxic substances, investigations can be made of which receptors in the body may be sensitive to, e.g., a toxin. These receptors could then be used in a biosensor.

Responding to a Chemical Weapons Incident

Although it is not known whether or when a biologic or chemical attack will take place, clinicians can improve the medical community's readiness for such a situation by disseminating reliable information to others. Many resources provide information on chemical and biologic terrorism; reliable sources are highlighted below.

The references used for Toxic Industrial Chemicals in Appendix A-3 apply as well to chemical weapons agents. Chemical weapons response measures can be found in the NIOSH Pocket Guide <http://www.cdc.gov/niosh/topics/chemical.html>, and the Emergency Response Guidebook 2004 <http://www.tc.gc.ca/canutec/en/guide/guide.htm>.

For more information, readers are referred to the [CDC web site](#), the [Agency for Toxic Substances and Disease Registry](#) (ATSDR) and the [World Health Organization](#). These web sites are excellent resources for the most up-to-date information on the management of chemical weapons exposures. They provide a listing of common agents, their properties and toxic effects, and also current information on management of exposed patients. They provide guidelines for management of HazMat situations in both the pre-hospital and emergency department settings, emphasizing agent identification, decontamination, and prevention of secondary contamination of health care providers. Since information in this area is evolving rapidly, readers are encouraged to visit these sites often to obtain the most current information. Also, The Medical Management Chemical Casualties Handbook provides guidance on these subjects <http://www.fas.org/nuke/guide/usa/doctrine/army/mmcch/index.html>.

Each classification of chemical agents requires special attention for adequate treatment. Table 1 below (from the U.S. National Academies and the Department of Homeland Security) summarizes the main threats and general treatments to minimize the consequences of exposure to chemical agents:

	Nerve Agents		Blister Agents (injure skin, eyes, and airways)		Blood Agents (cause blood changes and heart problems)		Choking Agents	
Examples	Sarin	VX	Mustard	Lewisite	Hydrogen Cyanide	Cyanogen Chloride	Chlorine	Phosgene
Odor	Odorless		Garlic or Mustard	Geraniums	Burnt almonds		Bleach	Mown hay
Persistency*	Non- persistent (min. to hrs.)	Persistent (>12 hrs.)	Persistent		Non-persistent		Non-persistent; vapors may hang in low areas	
Rate of Action	Rapid for vapors; liquid effects may be delayed		Delayed	Rapid	Rapid		Rapid at high concentrations; delayed at lower concentrations	
Signs and Symptoms	Headache, runny nose, salivation, pinpointing of pupils, difficulty in breathing, tight chest, seizures, convulsions, nausea, and vomiting		Red, burning skin, blisters, sore throat, dry cough; pulmonary edema, eye damage, nausea, vomiting, diarrhea. Symptoms may be delayed 2 to 24 hrs		Cherry red skin/lips, rapid breathing, dizziness, nausea, vomiting, convulsions, dilated pupils, excessive salivation, gastrointestinal hemorrhage, pulmonary edema, respiratory arrest		Eye and airway irritation, dizziness, tightness in chest, pulmonary edema, painful cough, nausea, headache	
First Aid	Remove from area, treat symptomatically, Atropine and pralidoxime chloride (2-PAM chloride), diazepam for seizure control		Decontaminate with copious amount of water, remove clothing, support airway, treat symptomatically		Remove from area, assist ventilations, treat symptomatically, administer cyanide kit		Remove from area, remove contaminated clothing, assist ventilations, rest	
Decontamination	Remove from area, remove clothing, flush with soap and water, aerate							
*How long a chemical remains at toxic levels								

Table 1: “Effects and Treatment of Some Chemical Weapons Developed for Military Use”

While most responses call for medical treatment that addresses the exact symptoms that manifest with exposure, nerve and blood agents may sometimes involve specific medication to reduce the effects of released chemical agents.

Treatment for nerve agents often involves the use of **atropine** and **pralidoxime chloride**. These drugs seek to reverse the effects of nerve agents so that more normal levels of neurotransmitters necessary for muscle function are present in the body. US Military Personnel are issued auto-injectors, known as Mark-I kits that deliver doses of these two treatments. Depending on the severity of the exposure, increased dosages of atropine and pralidoxime chloride may be needed to protect victims. Additionally, **diazepam** is administered to stop or prevent seizures among the most severe cases.

Treatment for a cyanide blood agent incident is with a **cyanide kit**. This kit should be readily available to first responders. These kits are more complicated and usually must be administered by trained medical personnel. Treatments of oxygen and nitrates are inhaled or delivered intravenously to restore normal cardiac and pulmonary functions.

The Chemical Weapons Convention

The Chemical Weapons Convention is an international treaty which bans the development, production, stockpiling, transfer and use of chemical weapons, and also stipulates their timely destruction. The Convention entered into force in 1997 and mandated the Organisation for the Prohibition of Chemical Weapons (OPCW) to

eliminate the scourge of chemical weapons forever and to verify the destruction of the declared chemical weapons stockpiles within stipulated deadlines.

All the Black Sea Initiative (BSI) countries have ratified the treaty and are among an additional 173 full member nations (as of October 2006). The date that each BSI country ratified the CWC is listed below in Table 1.

Bulgaria	Georgia	Moldova	Romania	Russia	Turkey	Ukraine
8/10/1994	11/27/1995	7/8/1996	2/15/1995	11/5/1997	5/5/1997	10/16/1998

Table 1: CWC Date of Ratification of BSI Countries

States Parties that possess chemical weapons are expected to eliminate their stockpiles within a decade of signing the treaty. Six States Parties to the CWC have declared the possession of chemical weapons. 100% of the declared chemical weapons production facilities have been inactivated. All are subjected to a verification regime of unprecedented stringency. Almost 30% of the 8.6 million chemical munitions and containers covered by the Convention have been verifiably destroyed. Over 19% of the world's declared stockpile of approximately 70,000 metric tonnes of chemical agent have been verifiably destroyed.

Aside from various provisions that establish a stringent verification regime in the area of chemical weapons and the chemical industry, the CWC also has an Article on "Assistance and Protection Against Chemical Weapons."³ Under the provisions of this Article, a State Party can request for assistance and protection under Article X of the CWC, if it is threatened by CW or CW or Riot Control Agents as a method of warfare have been used against it. Once the Director-General of the OPCW has received a request, the Technical Secretariat of the OPCW would conduct an instigation of alleged use of chemical weapons and would also assess the type and scope of assistance needed. The Director-General would also immediately forward the request for assistance to States Parties that have volunteered to dispatch assistance in accordance with paragraph 7 (b) and (c) of Article X. As of October 2006, 71 States Parties have pledged different types of assistance in addition; the Technical Secretariat maintains a data bank of information concerning various means of protection against chemical weapons.

³ The complete text of the CWC can be downloaded from the Organisation for the Prohibition of Chemical Weapons, "Convention on the Prohibition of Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction," http://www.opcw.org/docs/cwc_eng.pdf.

i Organisation for the Prohibition of Chemical Weapons. "Results." <http://www.opcw.org/ib/html/results.html>

Pledged contributions to OPCW by BSI Nations

Request for specific assistance, if applicable

Below is Specific Equipment pledged to OPCW by BSI Nations:

- Bulgaria: 1,000 sets of IPE and
1,000 sets of individual protective packages
- Georgia: provision of experts (unspecified)
- Moldova: 30,000 masks (for 7-18 yrs old)
15,000 masks (for 5-7 yrs old)
60,000 masks for adults
- Romania: 150 sets of IPE and €1.400 Voluntary Fund for Assistance
- Russian Federation: 900 protective masks PKM mobile lab assistance for
treatment training for OPCW med staff
- Turkey: €11,108.54 Voluntary Fund
- Ukraine: Protective equipment, Decon equipment, medical antidotes,
advisory assistance of qualified experts on neutralisation of CW

Appendix B: Glossary, Abbreviations, Acronyms

GLOSSARY

Arsines

Among the arsenal of chemical weapons can be found mustard agent mixed with **lewisite**, which is an aliphatic arsenic compound, 2-chlorovinylldichloroarsine. Pure lewisite is a colorless liquid. Solubility in water is approximately the same as for mustard agent but the volatility is much higher. Hydrolysis in water is faster than for mustard agent. Injuries caused by lewisite are similar to those caused by mustard agent. However, the mechanism of action for lewisite is different. From the diagnostic viewpoint, an important difference is that symptoms in lewisite poisoning are not delayed and the irritating effect occurs immediately. Skin damage is treated in the same way as after exposure to mustard agent. A specific antidote (BAL, British Anti Lewisite, dimercaptopropanol) gives good protection against local injuries to skin and mucous membrane. BAL also has effect against systemic poisoning. (Source: A FOA Briefing Book on Chemical Weapons)

Black Sea Economic Cooperation (BSEC)

An inter-governmental organization with Turkey designated as the host to its Secretariat. The organization has one working group of interest to the Black Sea Initiative. The Working Group on Cooperation in Emergency Assistance (Ukraine is the WG coordinator for 2003-2005) has established the "Agreement on Collaboration in Emergency Assistance and Response to Natural and Man-Made Disasters" signed April 1998 entered into force March 2003 (signed by Armenia, Bulgaria, Moldova, Romania, Russia and Ukraine). The WG has drafted an "Additional Protocol to the Agreement Among the Governments of the Black Sea Economic Cooperation Participating States on Collaboration in Emergency Assistance and Emergency Response to Natural and Man-Made Disasters" in March 2004, which is yet to be signed. Current information on the status of these documents can be located at: <http://www.bsec.gov.tr/asistance.htm> .

BLACKSEAFOR

The Black Sea Naval Cooperation Task Group established in 2001, ratified in 2003, it is a regional security, internal cooperation arrangement of on-call naval forces, formed between the six Black Sea nations (Bulgaria, Georgia, Romania, Russia, Turkey, and Ukraine). It brings together the littoral states in the first organization to unite all such navies; is available for use in humanitarian emergencies in the region, can maintain and strengthen peace and security in the area and enhance the activities of other international organizations (OSCE, NATO, EU, UN). The intent is to carry out tasks in the Black Sea, but if it so chooses can go elsewhere. BLACKSEAFOR may take part in UN, NATO, or OSCE mandated operations on demand. A new study has been initiated to investigate how it might be used to combat asymmetric threats. See: <http://www.harvard-bssp.org/bssp/2003/bulletin.pdf>

Blister agents

Blister Agents or vesicants, are one of the most common CW agents. These oily substances act via inhalation and contact with skin. They affect the eyes, respiratory tract, and skin, first as an irritant and then as a cell poison. As the name suggests, blister agents cause large and often life-threatening skin blisters, which resemble severe burns. Examples include sulfur mustard (H, HD), nitrogen mustard (HN), lewisite (L) and phosgene oxime (CX). Mustard agents and lewisite are the best known.

Chemical Agent

A chemical agent is a substance, which is intended for use in military operations to kill, injure, or incapacitate people because of its physiological effects. Excluded from this definition are riot control agents, herbicides, smoke, and flame. (Federation of American Scientists, www.fas.org/cw/cwagents)

Chemical Agent Monitoring (CAM)

To ensure that remains are free from contamination the medical examiner should monitor remains before releasing them to the community for final disposition. Chemical agent monitoring, is difficult, time consuming, and expensive. Most jurisdictions will require assistance in performing this type of monitoring from specialized military units. (Source: Guidelines for Mass Fatality Management During Terrorist Incidents Involving Chemical Agents U.S Soldier and Biological Chemical Command November 2001)

Chemical Weapons

Chemical Weapons means the following, together or separately:

- (a) Toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes;
- (b) Munitions and devices, specifically designed to cause death or other harm through the toxic properties of those toxic chemicals specified in subparagraph (a), which would be released as a result of the employment of such munitions and devices;
- (c) Any equipment specifically designed for use directly in connection with the employment of munitions and devices specified in subparagraph (b). (CWC Article II)

Choking agents

Chocking Agents inflict injury mainly on the respiratory tract—that is, they irritate the nose, throat, and especially the lungs. Victims typically inhale these agents, which cause the alveoli to secrete a constant low of fluid into the lungs, essentially drowning the victim. Examples of choking agents include: chlorine (Cl), phosgene (PG), diphosgene (DP) and chloropicrin (PS). Choking agents were among the first agents produced in large quantities. During World War I both sides used them extensively. Because they sink into and fill depressions, they were well suited to trench warfare. Their successful use on the battlefield led to research and development programs to create even more toxic and effective chemical weapons.

Chemical, Biological, Radiological, Nuclear, and High Yield Explosives (CBRNE)

A combined term that groups various types of weapons that can be used to cause large number of casualties. (Source: Stipulated)

Disaster

The occurrence of a sudden misfortune, which disrupts the basic fabric and normal functioning of a society (or community). An event or series of events that gives rise to casualties and/or damage or loss of property, infrastructure, essential services or means of livelihood on a scale that is beyond the normal capacity of the affected communities to cope with unaided. (Source: UN OCHA MCDA Field Manual) See also definitions compiled at the Center for Research on the Epidemiology of Disasters (CRED) based on the glossary of terms developed at a workshop organized by the United Nations Department of Humanitarian Affairs (UNDHA) in Prague in 1991 (now called the UN-Office for Coordination of Humanitarian Affairs (OCHA)), as well as on detailed discussions and documents from the World Health Organization (WHO), the World Meteorological Organization (WMO), and technical staff of UN-OCHA. The Scientific Technical Committee of the International Decade for Natural Disaster Reduction also has contributed significantly to the formulation of these terms.

Dual Use

“Dual-use” items and technologies. Many chemicals used widely for peaceful and commercial purposes can also be used as, or applied to the creation of, chemical weapons. To address the potential threat posed by these chemicals, the CWC definition of a chemical weapon had to be as comprehensive as possible. (OPCW Fact Sheet)

Incidence

The number of instances of illness commencing, or of persons falling ill, during a given period in a specified population. Incidence is usually expressed as a rate, the denominator being the average number of persons in the specified population during the defined period or the estimated number of persons at the mid-point of that period. (Source: Prevalence and Incidence. WHO Bulletin, 1966, 35: 783-784).

Isolation

The physical separation of individuals with certain infections from others to prevent or limit the transmission of disease. In contrast, quarantine applies to restriction on healthy contacts of an infectious agent. (Source: Taber's Cyclopedic Medical Dictionary, Copyright 2005 by F. A. Davis Co., Philadelphia, PA). Also see www.cdc.gov/ncidod/sars/Factsheetlegal.htm.

Key Component of Binary or Multi-component Chemical Systems ("key component")

The precursor, which plays the most important role in determining the toxic properties of the final product and reacts rapidly with other chemicals in the binary or multi-component system. (CWC, Article II)

Mitigation

Passive response; measures taken to suppress and/ or lessen the impact of anticipated or eventual event; preventive measures such as insurance, vehicle barricades, fire/blast resistant building materials/engineering, safe rooms, increased security, weapons of mass destruction (WMD) non-proliferation. (Source: Homeland Security Databases and Web Based Bibliographic Information) http://ccs.tamu.edu/homeland_security/mitigation.asp

Mustard Agents

Mustard agents are usually classified as "blistering agents" owing to the similarity of the wounds caused by these substances resembling burns and blisters. However, since mustard agents also cause severe damage to the eyes, respiratory system and internal organs, they should preferably be described as "blistering and tissue-injuring agents". Normal mustard agent, bis- (2-chloroethyl) sulphide, reacts with a large number of biological molecules. The effect of mustard agent is delayed and the first symptoms do not occur until 2-24 hours after exposure. (Source: A FOA Briefing Book on Chemical Weapons)

Nerve Agents

Among lethal CW agents, the nerve agents have had an entirely dominant role since the Second World War. Nerve agents acquired their name because they affect the transmission of nerve impulses in the nervous system. All nerve agents belong chemically to the group of organo-phosphorus compounds. They are stable and easily dispersed, highly toxic and have rapid effects both when absorbed through the skin and via respiration. Nerve agents can be manufactured by means of fairly simple chemical techniques. The raw materials are inexpensive and generally readily available. (Source: A FOA Briefing Book on Chemical Weapons)

Nerve agents work to block impulses between nerve cells or across synapses. They act primarily via absorption through the skin and lungs. Nerve agents are divided into two main groups: Gseries agents and V-series agents so called due to their military designations. Nerve agents are the product of the search for improved chemical agents between the two World Wars. In the late 1930s German chemists synthesized the first nerve agents, tabun (GA) and sarin (GB), which were the first of the G-series agents. Soman (GD) and cyclosarin (GE and GF) followed quickly thereafter. British chemists developed V-series agents, which tend to be more lethal, in the 1950s. The series includes: VE, VG, VM and VX, which is the best-known agent. Some G-agents, particularly tabun and sarin, persist for only short periods. Other agents, such as soman and cyclosarin, persist longer and present a greater threat to the skin. V-agents, in comparison, are extremely potent (only milligrams needed to cause death) and persist for long periods of time on the battlefield as, in military parlance, "slime." (OPCW Fact Sheet)

Old Chemical Weapons

- (a) Chemical weapons which were produced before 1925; or
- (b) Chemical weapons produced in the period between 1925 and 1946 that have deteriorated to such extent that they can no longer be used as chemical weapons. (CWC, Art.II, para 5)

Individual Protective Equipment (IPE) also Personal Protective Equipment (PPE)
(IPE is the internationally recognized acronym for protective equipment, PPE is used in the U.S.)*

Level A PPE* consists of a self-contained breathing apparatus, with full-facemask cover, a fully encapsulated chemical resistant suit, and inner chemical/biological resistant hand covers and resistant safety boots/shoes.

Level B PPE* consists of a self-contained breathing apparatus, with full-facemask cover a chemical resistant suit, and inner and outer chemical/biological resistant gloves, and chemical resistant boots/shoes.

Level C PPE* consists of a full-face air purifying canister-equipped respirator, full body chemical resistant suit, inner and outer chemical/biological resistant gloves, and resistant boots/shoes. (Source: Guidelines for Mass Fatality Management During Terrorist Incidents Involving Chemical Agents U.S Soldier and Biological Chemical Command November 2001)

Precursor

Any chemical reactant, which takes part at any stage in the production by whatever method of a toxic chemical. This includes any key component of a binary or multi-component chemical system. (CWC, Article II)

Public Health Crisis

A situation where there is a (actual/potential) risk of a major exposure to an unusual serious health hazard for a community (for which is perceived as such). Rather than an acute disproportion between these and resources, a public health crisis is characterized by: inadequate information; scientific uncertainty, and/ or public worry about causes, character, or dimensions of an unusual health problem. (Source: World Association For Disaster and Emergency Medicine, Education Committee Working Group, 30th July 2004, An Issues Paper- International Standards and Guidelines on Education and Training for the Multi-disciplinary Health Response to Major Events which Threaten the Health Status of a Community).

Public Health Emergency of International Concern

International Health Regulations 2005 defines it as an extraordinary event, which is determined by the IHR 2005 to constitute a public health risk to other Nations through the international spread of disease, and potentially require a coordinated international response. (Source: WHO, International Health Regulations 2005, http://www.who.int/gb/ebwha/pdf_files/WHA58/58_55-en.pdf see Note 1 below).

Registry of Toxic Effects of Chemical Substances (RTECS)

RTECS is a compendium of data extracted from the open scientific literature. The data are recorded in the format developed by the RTECS staff and arranged in alphabetical order by prime chemical name. Six types of toxicity data are included in the file: (1) primary irritation; (2) mutagenic effects; (3) reproductive effects; (4) tumorigenic effects; (5) acute toxicity; and (6) other multiple dose toxicity. Specific numeric toxicity values such as LD50, LC50, TDLo, and TCLo are noted as well as species studied and route of

administration used. For each citation, the bibliographic source is listed thereby enabling the user to access the actual studies cited. No attempt has been made to evaluate the studies cited in RTECS. The user has the responsibility of making such assessments. (NIOSH terminology)

Riot Control Agent

Any chemical not listed in a CWC Schedules, which can produce rapidly in humans sensory irritation or disabling physical effects, which disappear within a short time following termination of exposure. (CWC, Article II)

Riot control agents (RCAs) such as CS were the topic of long and heated debates during the CWC negotiations. At issue were their inclusion in the treaty and the restrictions that would be imposed upon their use. In the end, a compromise was reached under which States Parties are to declare to the OPCW the RCAs they possess for law enforcement purposes. Though use is allowed for these purposes, it is prohibited as a method of warfare. Furthermore, if a State Party considers that an RCA has been used against it as a Method of warfare, it has the right to request assistance from the OPCW. Such a request will trigger an investigation of alleged use (IAU) by the Organization, after which a decision will be made by the Executive Council regarding the provision of further assistance. (OPCW Fact Sheet)

Technical Decontamination

Technical decontamination refers to the detailed decontamination (e.g., wash, rinse, underlying procedures) used by specialized teams, most notably HazMat. It is recommended that at least one technical decontamination area be set up to support the special response teams that operate in the hot and warm zones. This includes law enforcement response and investigative teams.

Toxic Chemical

Any chemical, which through its chemical action on life processes can cause death, temporary incapacitation, or permanent harm to humans or animals. This includes all such chemicals, regardless of their origin or of their method of production, and regardless of whether they are produced in facilities, in munitions or elsewhere.

Weapons of Mass Destruction (WMD)

A weapon that is capable of a high order of destruction and of being used in such a manner as to destroy people, infrastructure, or other resources on a large scale. (Source: NATO Glossary of Terms and Definitions AAP-6 (2004))

The category of weapons that encompass nuclear, chemical, and biological weapons is termed weapons of mass destruction. (Source: Global Partnership Program Terminology)

Weapon capable of high order of destruction and/or of being used in such a manner as to destroy large numbers of people. Weapon of mass destruction can be high explosive or nuclear, biological, chemical, and radiological weapon, but exclude the means of transporting or propelling the weapon where such means is a separable and divisible part of the weapon. (Source: U.S. Joint Pub 1-02).

ABBREVIATIONS AND ACRONYMS

ACAT	Assistance Coordination and Assessment Team (OPCW)
AL	Albania (ISO)
ALOHA1	Area locations of Hazardous Atmospheres
AOR	Area of Responsibility
ARS	Assistance Response System (OPCW)
BAMS	Basic Assistance Modules (OPCW)
BG	Bulgaria (ISO)
BLACKSEAFOR	Black Sea Naval Cooperation Task Group
BSEC	Black Sea Economic Cooperation
BSEP	Black Sea Environmental Program
BSI	Black Sea Initiative
BWC	Biological Weapons Convention
C2	Command and Control
C3I	Command, Control, Communication, and Information
C4I ¹	Command, Control, Communication, Computers, and Information
CAMEO	Computer Aided Management of Emergency Operations
CAS ¹	Chemical Abstract Service
CASEVAC	Casualty Evacuation
CAX	Computer Assisted Exercise
CBRNE	Chemical,Biological,Radiological,Nuclear,andHighYieldExplosive
CDC ¹	Center for Disease Control and Prevention (United States)
CEP	Civil Emergency Planning
CEPD	Civil Emergency Planning Directorate (NATO)
CHRIS	Chemical Hazards Response Information System
CMEP ¹	Civil-Military Emergency Planning
CMEPC-SEE ¹	Civil-Military Emergency Planning Council for Southeastern Europe
CMX	Crisis Management Exercise
Comms	Communications
Coord ¹	Coordinate
CP ²	Check Point; Command Post
CPC	Civil Protection Committee
CPX	Command Post Exercise
CWC ¹	Chemical Weapons Convention
DE	Germany (ISO)
DECON	Decontamination

¹ Not included in NATO documentation.

² In NATO documentation, but different definition.

DMORT ¹	Disaster Mortuary Operational Response Team
DTRA	Defense Threat Reduction Agency
EADRCC	Euro-Atlantic Disaster Response Coordination Centre
EADRU	Euro-Atlantic Disaster Response Unit
EAPC	Euro-Atlantic Partnership Council
ECHO ²	European Commission Humanitarian Office
EMS	Emergency Medical Services
EOC ¹	Emergency Operation Center
EOD	Explosive Ordnance Disposal
ERC ¹	Emergency Relief Coordinator (UN)
EU	European Union
FTX	Field Training Exercise
GB	United Kingdom (ISO)
GE	Georgia (ISO)
GMT	Greenwich Mean Time
GO ¹	Governmental Organizations
GPS	Global Positioning System
GR	Greece (ISO)
HA ²	Humanitarian Assistance
HAZMAT ¹	Hazardous Material
HAZSUB	Hazardous Substances
HR	Croatia (ISO)
HVA	Hazardous Vulnerability Assessment
IAEA ¹	International Atomic Energy Agency
ICDO ¹	International Civil Defense Organization
ICRC	International Committee of Red Cross
ICS	Incident Command System
ID ¹	Identification; Identity
IDRA ¹	International Disaster Relief Assistance
IDRO	International Disaster Relief Operation
IFRC ¹	International Federation of Red Cross and Red Crescent Societies
IGO ¹	Inter-Governmental Organization
IHR ¹	International Health Regulations
IMO	International Maritime Organization
IM&TWG ¹	Information Management and Technology Working Group (BSI)
INSARAG ¹	International Search and Rescue Advisory Group
INTERPOL	International Criminal Police Organization
IO	International Organization

IPCS	International Program for Chemical Safety
IPOC ¹	Initial Point of Contact
ISO	International Standards Organization (UN)
IT	Italy (ISO)
Kg	Kilogram
LEMA ¹	Local Emergency Management Authority
LEPC	Local Emergency Planning Committee
LOC	Lines of Communication
ltr	Liter
m	Meter
MCDA	Military and Civil Defense Assets (UN)
MCDU ¹	Military and Civil Defense Unit (UN)
MD	Moldova (ISO)
MEDEVAC	Medical Evacuation
MFM ¹	Mass Fatality Management
MK	Former Yugoslav Republic of Macedonia (ISO)
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSA ¹	Mutual Support Agreements
mt	Metric ton
NAC	North Atlantic Council
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological, and Chemical
NBCWRS ¹	NBC Warning and Reporting Systems
NGO	Non-Governmental Organizations
NIOSH	National Institute for Occupational Safety and Health
NL ²	National Logistics; Netherlands (ISO)
NMA	NATO Military Authority
NSE	National Support Elements
OCHA ¹	Office for the Coordination of Humanitarian Affairs (UN)
OPCOM	Operational Command (UN)
OPCON	Operational Control (NATO)
OPCW	Organisation for the Prohibition of Chemical Weapons
OPLAN	Operation Plan
OPOC ¹	Operational Point of Contact
OSOCC	On Site Operations Coordination Centre (UN)
PEWG ¹	Planning and Exercises Working Group (BSI)
PIMS	Partnership Information Management System (NATO)

POC	Point of Contact
POD	Point of Debarkation
POE	Point of Embarkation
POL	Petrol, Oil, and Lubricants
PPE	Personal Protective Equipment
RCB ¹	Relief Coordination Branch (UNOCHA)
RECCE	Reconnaissance
RESREP	Resident Representative (UN)
RO	Romania (ISO)
RU	Russia (ISO)
SAMs	Specialized Assistance Modules (OPCW)
SAR	Search and Rescue
SCEPC	Senior Civil Emergency Planning Committee (NATO)
SI	Slovenia (ISO)
SITREP ¹	Situation Report
SOA ²	Standard Operating Arrangement
SOP	Standard Operating Procedure
SPOC ¹	Single Point of Contact
SPWG ¹	Standards and Procedures Working Group
SSG	Senior Steering Group (BSI)
STANAG	Standardization Agreement (NATO)
STON	Short Ton (used for airlift operations)
TA	Technical Arrangement
TACOM	Tactical Command
TACON	Tactical Control
TICs	Toxic Industrial Chemicals
Tm ¹	Team
TR	Turkey (ISO)
TTX	Table Top Exercise
UA	Ukraine (ISO)
UN	United Nations
UNCIVPOL ¹	United Nations Civilian Police
UNDAC ¹	United Nation Disaster Assessment and Coordination Team
UNDMT ¹	United Nations Disaster Management Team
UNEP ¹	United Nations Environmental Program
UNHCR	United Nations High Commissioner for Refugees
UNICEF ¹	United Nations Children Fund
US	United States (ISO)
UTM	Universal Transversal Mercator (grid)
WFP ¹	World Food Program

WG	Working Group
WHO ¹	World Health Organization
WMD	Weapons of Mass Destruction
Wt ¹	Weight (metric tons)

Appendix C: Exercise Messages: Standard Message Formats – Chemical Incident Guidance

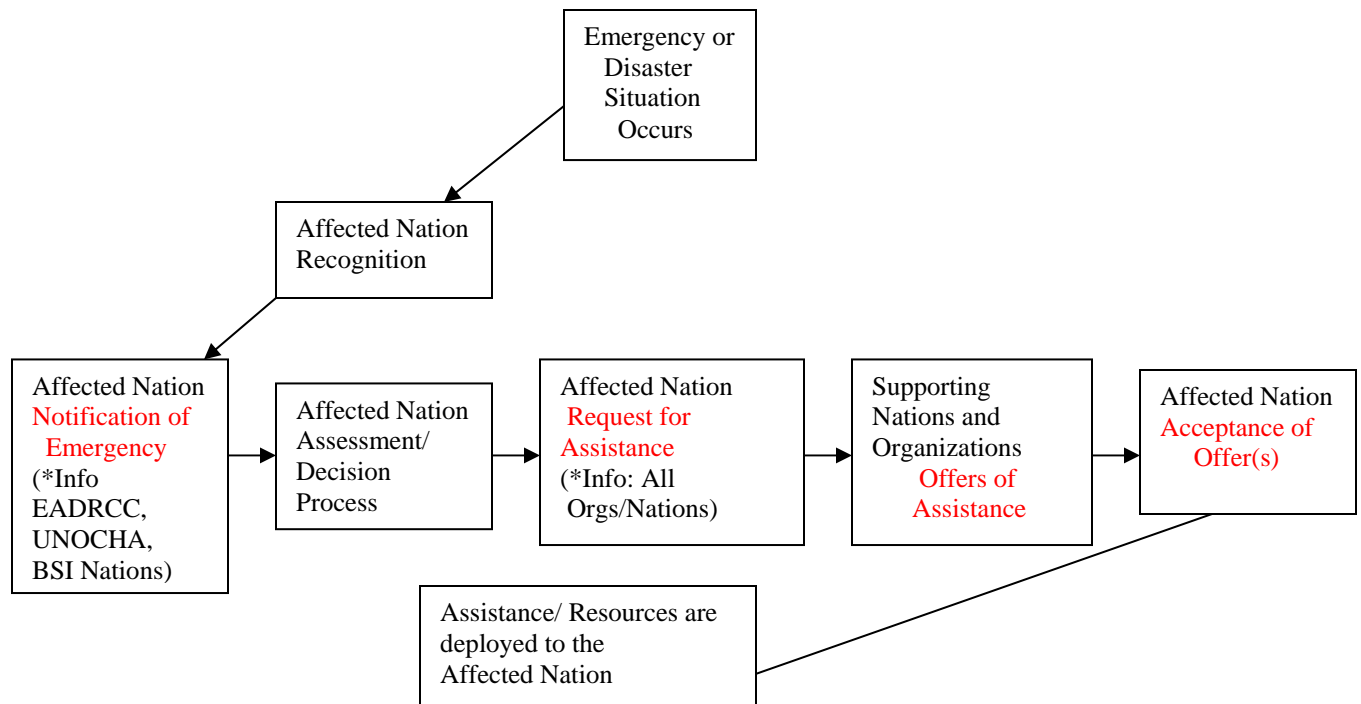
This section provides a set of message formats to be used for communication during the exercise. This includes standard message formats based on those from the Euro Atlantic Disaster Response Coordination Center (EADRCC), as well as instruction for notification and reporting message formats (see C-7) to be sent to the Organisation for Prohibition of Chemical Weapons (OPCW), which is the international organization that could be engaged in Chemical Weapons incident, if so requested. EADRCC message formats are designed to facilitate the rapid and orderly transfer of information between nations affected by disaster and those nations or organizations providing support and assistance. The OPCW Reporting Forms have been created for the purpose of this exercise based upon OPCW reporting guidelines. It should be noted that this information is usually conveyed by telephone. For the purposes of this TTX, fictitious email addresses will be used. Separate documentation with these addresses and an explanation of the TTX communication tools will be provided.

Message Numbering, Tracking, and Formats

To track communications during the exercise, messages should be numbered to give them a unique identity. A proposed numbering system follows:

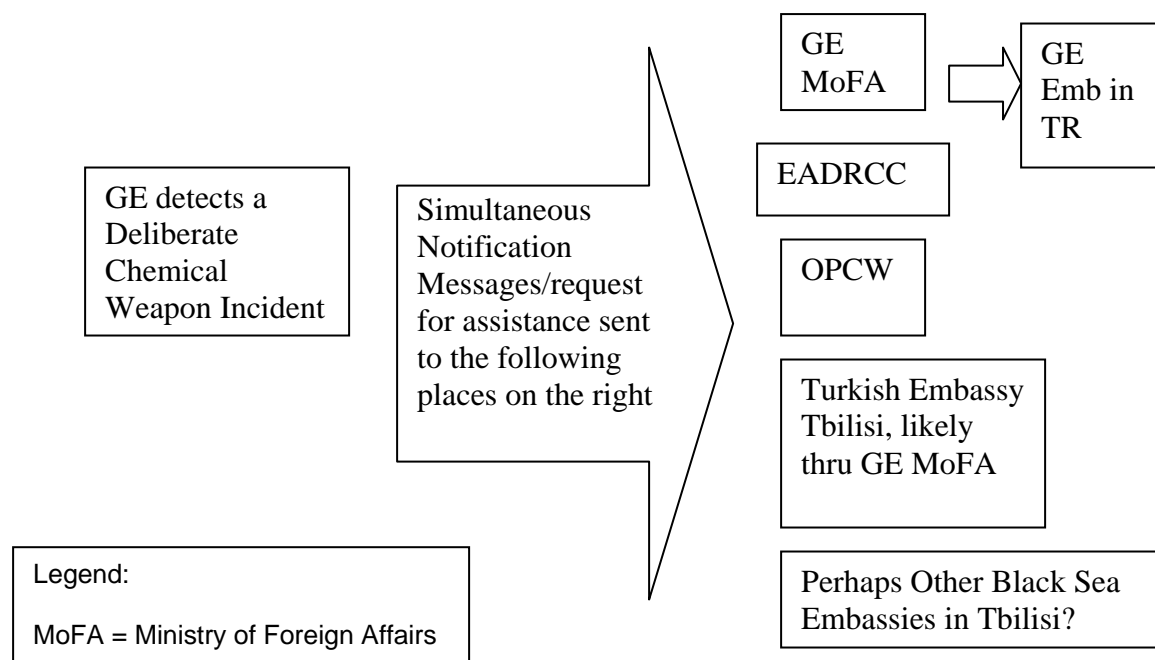
1. Use the first letter for report type i.e., N – Notification, R – Request, O – Offer, A – Acceptance, C – Coordination, S – SITREP. The next two letters identify originating nation using the International Standardization Organization codes: Bulgaria – BG, Georgia – GE, Moldova – MD, Romania – RO, Russia – RU, Turkey – TR, and the Ukraine – UA.
2. The last three numbers are a sequential number furnished by the originator of the message and recorded in the originator's message log.
3. These message numbers should go on the subject line of the email as well as in line 4 of the message template. Each successive message in response to the initial request will contain the reference messages numbers that proceeded.
 - a. Example: R-GE-001: an initial Request for Assistance message from Georgia
 - b. Example: O-TR-001: an Offer message from Turkey with number 001 (indicating first offer). When a message responds to another, that message should be referenced on line 5. (O-GE-001)
 - c. Example: A-GE-001: an Acceptance message from Georgia to another country, the initial request and the offer reference numbers would be listed in line 5 of message template.
 - d. Example: C-TR-001: a Coordination message from Turkey. R-GE-001 would be listed on line 5 reference to identify that C-TR-001 is in response to Georgia's request message 001.
 - e. Example: The email subject lines for the messages referenced in A through D above would be
 - i. R-GE-001
 - ii. R-GE-001 O-TR-001
 - iii. R-GE-001 O-TR-001 A-GE-001
 - iv. R-GE-001 O-TR-001 A-GE-001 C-TR-001

The following diagram (figure C-1) portrays the flow of Standard Messages.



* During the Standard Message Process clarification messages and updated Information is circulated using Coordination Messages and Situation Reports.

The following Figure C-2 Parallel Message Flows diagram Notification message flow.



Appendix C-1: Notification of Disaster Message

This message is used by the affected nation to alert international organizations and neighboring nations of a crisis or disaster. It provides initial description of crisis and contact information for affected nation.

- 1. To:** [Emergency Points of Contact EADRCC, BSI Nations]
- 2. From:** [Affected Nation-Date/Time (GMT)]
- 3. National Point of Contact:**
 - a.** [Name]
 - b.** [Organization]
 - c.** [Phone]
 - d.** [Fax]
 - e.** [Email]
- 4. Subject:** Notification of Disaster Message [Type Disaster/Affected Nation]
- 5. References:** [References]
- 6. Description of Event:**
 - a.** [Type of Disaster]
 - b.** [Date and Time Disaster Occurred in GMT]
 - c.** [Location of Disaster in Geographic coordinates]
 - d.** [Size of Area Affected by Disaster]
 - e.** [Estimated Numbers of Persons Affected]
 - f.** [Initial Reports of Damage Caused by Disaster]

Appendix C-2: Request for Assistance Message

This message is used by the affected nation to request assistance from International agencies or Neighboring Nations. It again provides description of disaster, national contact, but also identifies needed assistance, what, how many and for what duration.

- 1. To:** [Director-General OPCW, Emergency POCs EADRCC, BSI Nations]
- 2. From:** [Affected Nation-Date/Time (GMT)]
- 3. National Point of Contact:**
 - a. [Name]
 - b. [Organization]
 - c. [Phone number]
 - d. [Fax number]
 - e. [Email address]
- 4. Subject:** Request for Assistance [Type Disaster/Affected Nation]
- 5. References:** [References]
- 6. Description of Disaster:**
 - a. [Type of Disaster]
 - b. [Date and Time Disaster Occurred (GMT)]
 - c. [Location of Disaster in Geographic coordinates]
 - d. [Size of Area affected by Disaster]
 - e. [Estimated Numbers of Persons affected]
 - f. [Other affected (structures, crops, animals etc.)]
 - g. [Anticipated Situation for next 24, 48, and 72 hours]
- 7. Assessment of Needs:**
 - a. [Affected Nation Response Capabilities-Resources in affected Nation]
 - b. Assistance Requested from Supporting Nations-Prioritized:
 - (1.) Services:
 - (a.) [Description/MCDA No.][Quantity][Date and Duration]
 - (b.) [Description/MCDA No.][Quantity][Date and Duration]
 - (2.) Supplies:
 - (a.) [Description/MCDA No.][Quantity][Date and Duration]
 - (b.) [Description/MCDA No.][Quantity][Date and Duration]
 - c. [Affected Nation Capability to Support Assistance Requested]
- 8. Coordinating Instructions:**
 - a. [Detail on points of entry: port, airport, border crossing; routes of travel to staging area; and Geo-coordinates of these locations]
 - b. [Meteorological and terrain conditions]
 - c. [Phone, Fax, and Email of National Point of Contact for Requested Assistance]

Appendix C-3: Offer of Assistance Message

This message is used by supporting nations and international agencies to respond to affected nation with pending offers of assistance. This message should include supporting nation point of contact, reference to the Request for Assistance Message prompting this offer, and provide description of assistance being offered.

- 1. To:** [Affected Nation]
[All Responding Nations and IOs]
- 2. From:** [Supporting Nation-Date/Time (GMT)]
- 3. Supporting Nation Point of Contact:**
 - a. [Name]
 - b. [Organization]
 - c. [Phone number]
 - d. [Fax number]
 - e. [Email address]
- 4. Subject:** Offer of Assistance Message [Type Disaster/Affected Nation]
- 5. References:** [References]
- 6. Description of Assistance Offered:**
 - a. Services:
 - (1.) [Description/MCDA No.][Quantity][Date Available][Duration]
 - (2.) [Description/MCDA No.][Quantity][Date Available][Duration]
 - b. Supplies:
 - (1.) [Description/MCDA No.][Quantity][Date Available][Duration]
 - (2.) [Description/MCDA No.][Quantity][Date Available][Duration]
- 7. Coordinating Instructions:**
 - a. [Detail of Supporting Nations proposed points of entry to Affected Nation]
 - b. [Details regarding Supporting Nation requirements while in the Affected Nation, the disaster area]
 - c. [Phone, Fax, and Email of Supporting Nation Point of Contact]

Appendix C-4: Acceptance of Assistance Message

This message is used by affected nations to accept assistance offered by supporting nations. Information provided on this form are National Point of Contact, description of assistance being accepted and assistance that cannot be accepted.

- 1. To:** [Supporting Nation]
[All Responding Nations and IOs]
- 2. From:** [Affected Nation-Date/Time in GMT]
- 3. National Point of Contact:**
 - a. [Name]
 - b. [Organization]
 - c. [Phone number]
 - d. [Fax number]
 - e. [Email address]
- 4. Subject:** Acceptance of Assistance Message [Type Disaster/Affected Nation]
- 5. References:** [References]
- 6. a. Description of Assistance Accepted:**
 - (1.) Services:
 - (a.) [Description/MCDA No.][Nation Providing][Quantity Accepted][Date and Duration]
 - (b.) [Description/MCDA No.][Nation Providing][Quantity Accepted][Date and Duration]
 - (2.) Supplies:
 - (a.) [Description/MCDA No.][Nation Providing][Quantity Accepted][Date and Duration]
 - (b.) [Description/MCDA No.][Nation Providing][Quantity Accepted][Date and Duration]
- b. Description of Assistance to be put on Standby, NOT immediately required:**
 - (1.) Services:
 - (a.) [Description/MCDA No.][Nation Providing][Quantity]
 - (b.) [Description/MCDA No.][Nation Providing][Quantity]
 - (2.) Supplies:
 - (a.) [Description/MCDA No.][Nation Providing][Quantity]
 - (b.) [Description/MCDA No.][Nation Providing][Quantity]
- 7. Coordinating Instructions:**
 - a. [Details of Affected Nations plan to support the arrival of assistance]
 - b. [Details regarding Affected Nations ability to support arriving assistance while in the disaster area]
 - c. [Phone, Fax, and Email of Affected Nation Point of Contact]

Appendix C-5: Guidance for Coordination Message

The Coordination Message is used for all communications between nations and organizations not covered by other standard messages. This message format does not have a pre-specified text and the following guidelines are to be used for preparing and sending a Coordination Message. For the purposes of this TTX this form appears as an email template you may fill in. The text in this message should contain a specific request for information, a response to a request, or clarification of information that has already been sent. The message usually will contain information on who, what, when, where, and how. Coordination messages should be sent to the EADRCC to ensure this coordinating body is kept aware of all actions that are taken. This message format was developed for SEESIM 04 and used in Tomis 2005.

Coordination Message

- 1. To:** [Country/Organization]
[All Responding and Affected Nations, OPCW, EADRCC, BSI Nations]
- 2. From:** [Country/Organization-Date/Time in GMT]
- 3. National Point of Contact:**
 - a. [Name]
 - b. [Organization]
 - c. [Phone number]
 - d. [Fax number]
 - e. [Email address]
- 4. Subject: Coordination Message [Type Disaster/Affected Nation]**
 - a. Requests for Information (RFI).
 - b. Providing information in response to an RFI.
 - c. Coordination or clarification of arrangements between nations or organizations.
- 5. References:** [References]

Appendix C-6: Guideline for Situation Report (SITREP)

The SITREP is prepared by the affected nation. This message format was developed for SEESIM 04 and used in Tomis 2005. It can be used for two purposes: (a) to report the daily status of the situation in the affected nation, and (b) to report significant changes in the situation.

1. Report of Daily Status:

Personnel	Number of personnel on hand, changes in the numbers since the previous report, and the reason for such changes
Work Accomplished	Work accomplished during the past 24 hours, for example as of 1300 hours for activities that occurred between 1200 Z and 1159 Z daily
Problems Encountered	Description of the problems encountered, the reasons for them, and proposals/suggestions to eliminate future problems
Miscellaneous	Anything relevant to ongoing operations
2. Report of Significant Changes:

Report changes that are important to the responders (i.e. in a Chemical Weapons Incident). An update should be sent when any change affecting the situation would concern responders or affect international borders and neighboring nations.

SITREP

1. **To:** [Assisting Nations, OPCW, EADRCC]
Info: [Other BSI Nations and Interested Organizations]
2. **From:** [Affected Nation-Date/Time (GMT)]
3. **Point of Contact:**
 - a. [Name]
 - b. [Organization]
 - c. [Phone number]
 - d. [Fax number]
 - e. [Email address]
4. **Subject:** Situation Report (SITREP) [Situation/Affected Nation]
5. **Reference:** [Other References]
6. **Description of Incident**
 - a. [Describe Incident and Impact on Response Capabilities]
 - b. [Date and Time the Incident occurred in GMT]
 - c. [Location of Incident]
 - d. [Casualties: Dead, Seriously injured, possible restrictions/decontamination requirements, etc.]
 - e. [Assessment of Situation for the next 12 Hours and whether Requests for Assistance will follow]
7. **Other Significant Remarks:**

Appendix C-7: OPCW Request for Assistance

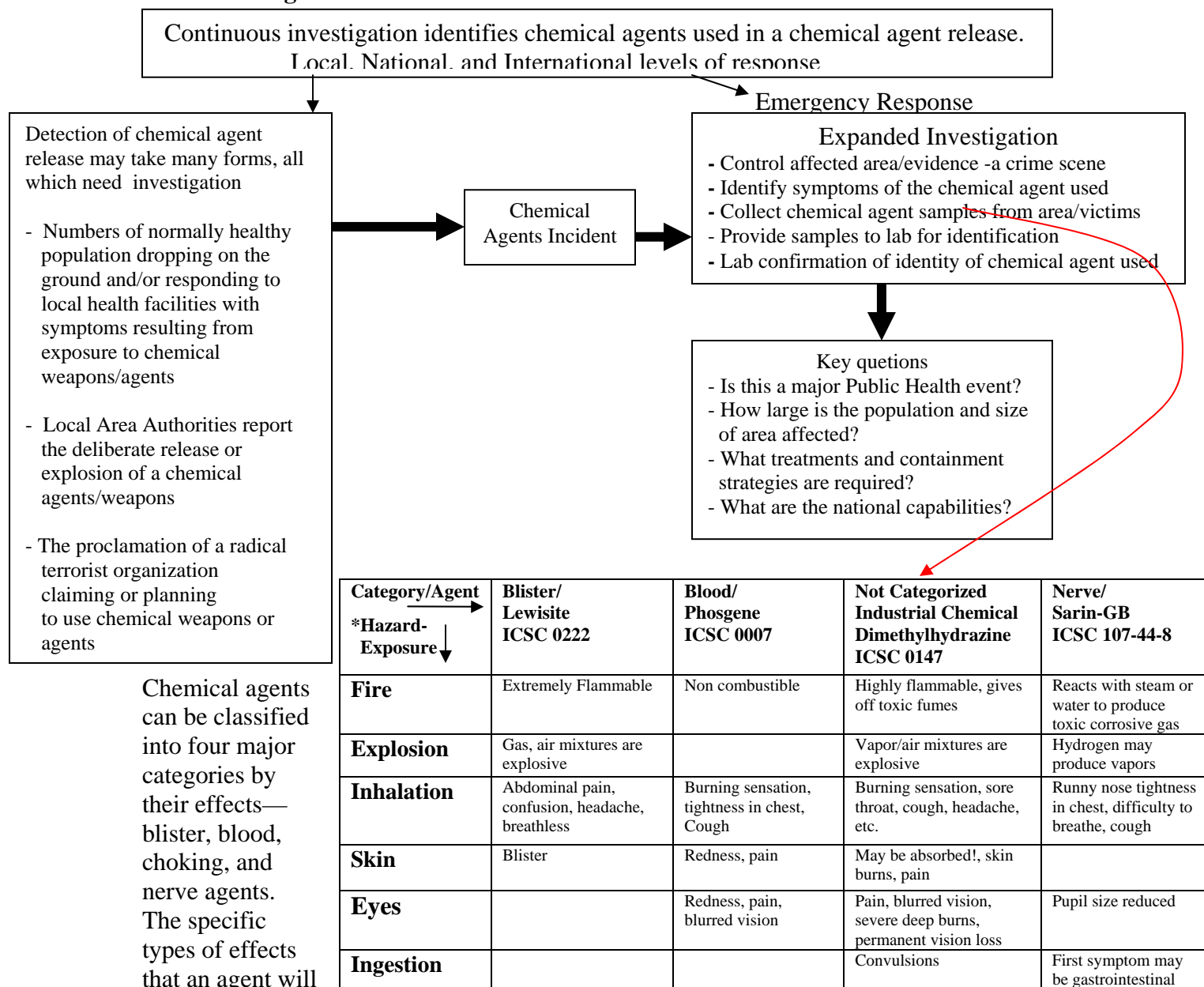
The following OPCW Request for Assistance format is derived from suggested reporting information referenced in the Verification Annex Part XI of the CWC, and is based upon the standard EADRCC message reporting formats. A request for assistance under Article X of the CWC has to be submitted to the Director General of the OPCW. The Director-General shall transmit it immediately to the Executive Council of the OPCW and all States Parties. The Director-General shall immediately forward this request to all those States Parties which have volunteered, in accordance with paragraph 7 of Article X of the CWC, to dispatch emergency assistance in case of use of: chemical weapons (paragraph 8a of the CWC), or riot control agents as a method of warfare (paragraph 8b of the CWC), or humanitarian assistance in case of serious threat of use of chemical weapons or serious threat of use of riot control agents as a method of warfare to the State Party concerned not later than 12 hours after receipt of the request (paragraph 8c of the CWC). For this TTX, the following derived OPCW Request for Assistance message format can be used to transmit requests to the OPCW role player via the TTX web mail tool.

- 1. To:** [Director-General OPCW, Emergency Points of Contact, EADRCC]
- 2. From:** [Requesting State Party-Date/Time (GMT)]
- 3. National Point of Contact:**
 - a. [Name]
 - b. [Organization]
 - c. [Phone number]
 - d. [Fax number]
 - e. [Email address]
- 4. Subject:** Request for Assistance under Article X, paragraph 8 a/b/c [specify] of the CWC
- 5. References:** [References]
- 6. Description of Incident:**
 - a. [State Party on whose territory use of CW is alleged to have taken place]
 - a. [Point of entry or other suggested safe routes of access]
 - b. [Location and characteristics of alleged CW use]
 - c. [Time of alleged CW use]
 - d. [Types of CW used]
 - e. [Extent of alleged use]
 - f. [Characteristics of the possible toxic chemicals]
 - g. [Effects on humans, animals, and vegetation]
- 7. Assessment of Needs:**

- a. [Affected Nation Response Capabilities - Resources in affected Nation]
 - b. Assistance Needs - Prioritized:
 - (1.) Services:
 - (a.) [Description][Quantity][Date and Duration]
 - (b.) [Description][Quantity][Date and Duration]
 - (2.) Supplies:
 - (a.) [Description][Quantity][Date and Duration]
 - (b.) [Description][Quantity][Date and Duration]
 - c. [Affected Nation Capability to Support the Delivery of Assistance Operation]
8. Coordinating Instructions:
- a. [Detail on points of entry: port, airport, border crossing; routes of travel to Staging area; and Geo-coordinates of these locations]
 - b. [Meteorological and terrain conditions]
 - c. [Phone, Fax, and Email of National Point of Contact for Requested Assistance]

Appendix D: Containment and Decontamination Protocol for Deliberate Chemical Incident Response

This appendix references processes and information contained in Appendices A-3 and A-4, on the detection, identification, and response to a chemical agent release. This appendix also schematically provides a notional protocol for emergency response to contain and decontaminate populations and areas affected by the release of chemical agents.



* Information on hazards-exposure was taken from the NIOSH Pocket Book/International Chemical Safety Cards (ICSCs) <http://www.cdc.gov/niosh/npg/pgintrod.html>.

As identified in the Case Development chart above, the following characterizes processes to identify the agent and to protect affected populations and those responding to assist in chemical emergencies. One process is to identify the route of exposure for the agent.

Identifying the Routes of Exposure for the Agent

Chemical agents can enter the body through three primary pathways—ingestion, dermal absorption, or inhalation. Ocular tissue can also be a pathway, though it is somewhat similar to dermal exposure. Identifying the primary and secondary exposure pathways allows Emergency Managers to determine appropriate emergency response protocols including Individual Protective Equipment (IPE) for responders, decontamination protocols, and treatment regimes. The following exposure pathway information was adapted from the World Health Organization (WHO):

Inhalation is usually the most damaging exposure pathway. The chemical composition of the agent will affect exactly where in the respiratory system the toxin is absorbed. Water-soluble vapors normally enter the body in the nasal passages and upper respiratory system; water-insoluble chemicals can be deposited deep within the lower chest cavity. From the lungs, the chemical compound is easily distributed throughout the entire muscular tissue and central nervous system, allowing the effects of a toxin to reach all parts of the body or quickly reach systems it is designed to target.

Dermal absorption, (skin/eyes) or contact, can allow agents to target an exposed area of skin or penetrate deep through the cellular tissue to affect the entire body. According to the WHO, high humidity and thinner, moister skin facilitates faster absorption of chemicals. Because it takes some time for an agent to fully penetrate the skin, evacuating from the incident site and immediately washing or decontaminating the skin can lessen the effects of exposure.

Ingestion occurs when food or water has been infected with chemicals, or other infected sources reach the body via hand-mouth or related contact. Because the mouth is typically the only inlet and outlet for this exposure pathway, it is the easiest to control to reduce exposure risks. Furthermore, when chemicals are ingested, they must pass through the gastrointestinal system before being dispersed throughout the body. This can cause some delay in the onset of symptoms allowing for more treatment if an attack is recognized; otherwise the symptoms associated with ingestion of toxic agents can often be mistaken for lesser ailments.

Identify the Method of Delivery

Chemical agents vary in composition and their toxicity can be affected by the method in which they are employed. Typically, chemical agents are the most dangerous when they are inhaled. In order for chemicals to reach a person's lungs, the chemical must be released in an airborne capacity. This typically involves rendering agents into vapor or aerosol forms. Otherwise, chemical agents are usually in liquid form. Usually solid chemicals are only employed after being weaponized that is, manipulating agents into a form so they are effective when used in a lethal device. Weaponized solid chemicals can be converted to an aerosol or are ground up into a fine powder. The method of dispersion (below) will affect modeling, defining hot and cold zones and what type of decontamination and treatment is appropriate.

Weaponization involves placing the chemical source as close to the target as possible. Various improvements have been made to this method over the last century. In World War I, Germans simply opened their chlorine gas cylinders and allowed the wind to carry the toxic cloud in the direction of opposition forces. This method was extremely rudimentary, though, and gave little control over the chemical. If the wind changed direction, the troops deploying the chemicals could have been exposed and injured if they were not properly protected. Artillery shells have also been used to deliver a chemical payload. They would either be set to burst in air or on impact.

Explosive, Thermal, and Pyrolytic dissemination/dispersion. Explosive dispersion relies on using an explosive charge to spread chemical agents. When the weapon detonates, the force from the explosion expels toxins at a distance larger than most other dispersal techniques. This method, though, is not entirely efficient. The immense heat generated from the blast can cause **thermal dissemination** destroying some of the chemicals, and making it difficult to control the size of chemical particles to achieve maximum concentrations of agents. Aside from the chemicals being destroyed, there is also a risk that the chemical agent could fully ignite, given the high flammability of many compounds. This could cause **pyrolytic dispersion** where the agent is burned and released as smoke.

Aerodynamic dissemination is a non-explosive delivery form that normally sprays a chemical agent from an aircraft, although there are other less sophisticated means to spray chemical agents.

Safety and Decontamination Measures in Response to a Chemical Agent Release

Establish Hot, Warm, and Cold Zones begin Decontamination Measures

After a chemical agent release has been recognized, the procedures for minimizing exposure are dependent on many factors, including the type of chemical agent dispersed, the method of delivery, and a person's location relative to the incident

site. When at all possible, it is important to evacuate from a hazardous (affected) area. At other times, it could be safer to actually shelter-in-place to avoid becoming exposed to chemical agents and then evacuate when the area is clear of the agent.

Protective Actions

Protective Actions are those steps taken to preserve the health and safety of emergency responders and the public during an incident involving releases of chemical agents. First responders should take all possible means of protection until the specific agents employed and the levels of protection to be used against such agents are determined. For large areas affected by specific agents responders should outline the affected and outlying areas that could be contaminated and deny entry. Prediction of the size of downwind areas, which could be affected by a cloud of toxic gas although difficult, should also be accomplished. People in the affected areas should be evacuated if possible, and/or sheltered in-place inside buildings until it is possible to evacuate.

Isolate Hazard Area and Deny Entry means keeping everyone away from the area unless they are directly involved in emergency response operations. Unprotected emergency responders should not be allowed to enter the isolated zone. This “isolation” task is done in order to establish control over the area of operations. This should be the first step in protective actions.

Evacuate means moving all people from affected areas to safer places. To perform an evacuation, there must be enough time for people to be warned, to get ready, and to leave the area. If there is enough time, evacuation is the best protective action. Begin evacuating people nearby and those persons outdoors in direct view of the scene. When additional help arrives, expand the area to be evacuated downwind and crosswind to a definite place, by a specific route, far enough away so they will not have to be moved again if the wind shifts.

Shelter In-Place means people should seek shelter inside a building and remain inside until the danger passes. Sheltering in-place is used when evacuating the public would cause greater risk than staying where they are, or when an evacuation cannot be performed. Direct the people inside to close all doors and windows and to shut off all ventilating, heating, and cooling systems. In-place protection may not be the best option if:

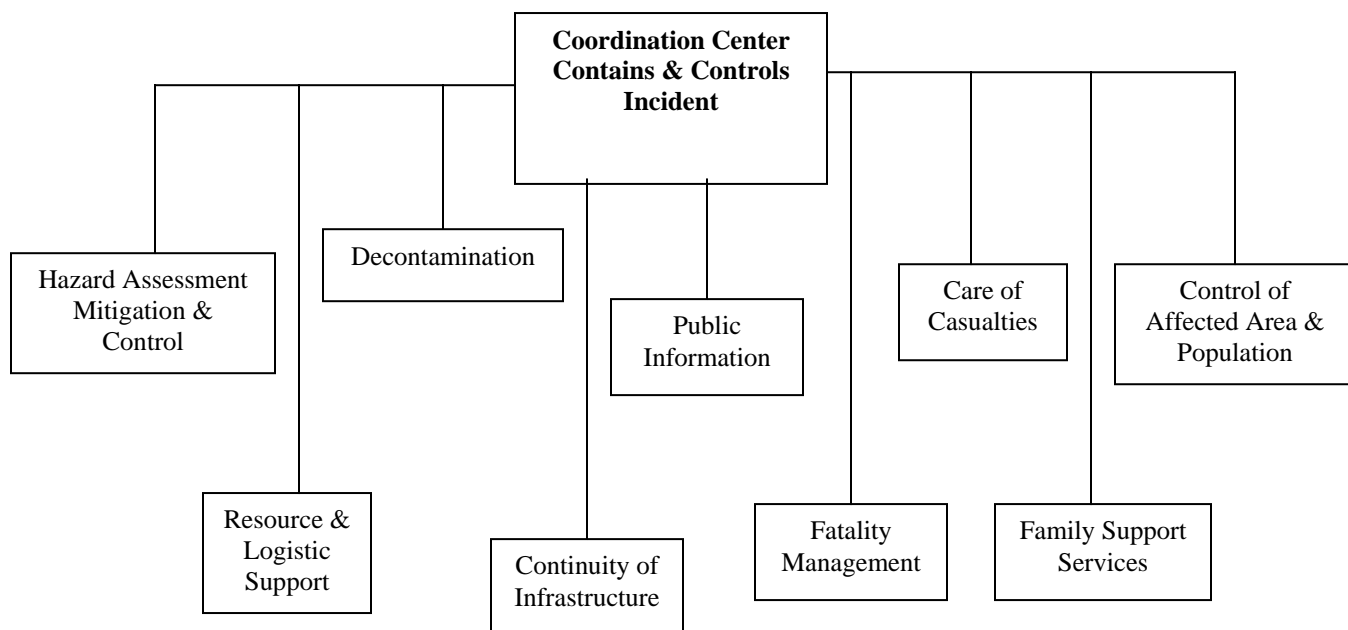
- (a) The vapors are flammable;
- (b) If it will take a long time for the gas to clear the area; or
- (c) If buildings cannot be closed tightly. Vehicles can offer some protection for a short period if the windows are closed and the ventilating systems are shut off. Vehicles are not as effective as buildings for in-place protection.

It is vital to maintain communications with competent persons inside the building so that they are advised about changing conditions. Person's protected-in-place should be warned to stay far from windows because of the danger from glass and projected metal fragments in a fire and/or explosion.

Command and Control

Every chemical agent incident is different. Each will have special problems and concerns. Action to protect the public must be selected carefully. Officials must continue to gather information and monitor the situation until the threat is removed. Command and control of the situation must be maintained.

The example below provides a schematic of a notional National Coordination Center. It is not intended to be all inclusive, but provide those important subsections of the coordination center that will provide information, security, and operations for the emergency response.



Summary of Chemical Agent Response Process

The chemical agent response process is well summarized in the following World Health Organization (WHO) published guidelines to assist countries with their response to chemical incidents. (World Health Organization – “Public health response to biological and chemical weapons: WHO guidance (2004)”)

- Through use of detection systems and/or by analyzing the symptoms of the affected population, first responders should attempt to identify the chemical released.
- High-risk areas should be identified using all tools available, including modeling, to predict dispersal behavior.
- First responders and other emergency responders should use individual protective equipment (IPE) as levels of protection dictate.
- “Hot” and “cold” zones should be established to limit more people from being affected and treating those who were already exposed.
- Victims directly exposed to the chemical should be decontaminated on-site when possible and monitored for further symptoms before being released.
- International assistance should be requested at an early stage, if needed, so a response could be mobilized immediately.
- Long-term effects to the environment and victims should be monitored to ensure the safety all of citizens.

Appendix E: Model Customs Agreement

This appendix contains the model for international customs agreements. Its purpose is to facilitate the delivery of humanitarian assistance to an affected nation. It is recommended that all nations participating in the Black Sea Initiative exercises adopt the Customs Facilitation Agreement approved by the Permanent Technical Committee of the World Customs Organization.

MODEL AGREEMENT

between the United Nations and State/Government of _____
concerning measures to expedite the import, export, and transit of relief consignments and possessions of relief personnel in the event of disasters and emergencies

Whereas paragraph 3 of the Annex to United Nations General Assembly Resolution 46/182 underlines that humanitarian assistance should be provided with the consent of and in principle on the basis of an appeal by the affected country, and that the sovereignty, territorial integrity and national unity of States must be fully respected in accordance with the Charter of the United Nations;

Whereas paragraph 6 of the said Annex calls upon the States, whose populations are in need of humanitarian assistance, to facilitate the work of intergovernmental and non-governmental organizations in implementing this assistance;

Whereas paragraph 7 of the said Annex urges the States in proximity to emergencies to participate closely with the affected countries in international efforts, with a view to facilitating, to the extent possible, the transit of humanitarian assistance;

Whereas paragraph 28 of the said Annex instructs the United Nations to continue to make appropriate arrangements with interested Governments and intergovernmental and non-governmental organizations to enable it to have more expeditious access, when necessary, to their emergency relief capacities, including food reserves, emergency stockpiles and personnel, as well as logistic support;

Whereas paragraph 29 of the said Annex further instructs the United Nations to develop special emergency rules and procedures to enable all organizations to procure quickly emergency supplies and equipment;

Whereas paragraph 30 of the said Annex requests disaster-prone countries to develop special emergency procedures to expedite the rapid procurement and deployment of equipment and relief supplies;

Whereas paragraph 4 of United Nations General Assembly Resolution 47/168 calls upon potential donors to adopt necessary measures to increase and expedite their contributions, including setting aside, on a stand-by basis, financial and other resources that can be disbursed quickly to the United Nations system in response to the consolidated appeals of the Secretary General;

Whereas paragraph 8 of the said Resolution requests the Secretary General, after consultations with Governments, to report on ways and means to improve further United Nations capability in the areas of prevention and preparedness in relation to natural disasters and other emergencies, in particular emergencies involving food, medicines, shelter and health care, as provided in General Assembly resolution 46/182;

Whereas the Office for the Coordination of Humanitarian Affairs serves as the central focal point in the United Nations with Governments, intergovernmental and non-governmental organizations concerning the United Nations emergency relief operations;

Whereas the Customs Co-operation Council adopted, on 8 June 1970, a Recommendation to expedite the forwarding of relief consignments in the event of disasters;

Whereas the International Convention on the simplification and harmonization of Customs procedures (Kyoto Convention), the Customs Convention on the A.T.A. carnet for the temporary admission of goods (A.T.A. Convention), the Convention on Temporary Admission (Istanbul Convention), the Convention on International Civil Aviation (Chicago Convention) and the International Maritime Organization Convention on Facilitation of International Maritime Traffic recommend simplified procedures and other facilitation measures to be applied, *inter alia*, to the transborder movement of relief consignments and possessions of disaster relief personnel;

Whereas the State/Government of _____ wishes to contribute to the expeditious delivery of international humanitarian assistance to the disaster-affected population;

Now therefore, the United Nations represented by

(Office for the Coordination of Humanitarian Affairs or a designated United Nations Agency)

and the State/Government of _____

represented by _____

hereby agree as follows:

ARTICLE 1.

Definitions

For the purpose of this Agreement the term:

1.1. "*Disaster*" means:

A serious disruption of the functioning of the society, causing widespread human, material, or environmental losses, which exceed the ability of, affected society to cope using only its own resources.

The term covers all disasters irrespective of their cause (i.e both natural and manmade).

1.2. *"Disaster relief personnel"* means:

Individuals, groups of individuals, teams, and constituted units executing delivery of humanitarian assistance within the framework of a United Nations relief operation.

Examples of disaster relief personnel that can be involved in any particular disaster are:

- UN delegates;
- Experts on mission for the United Nations;
- Emergency response personnel to assist refugees and internally displaced persons;
- International Search and Rescue teams;
- Medical teams;
- Specialized teams provided by foreign military, civil defense and civil protection organizations (MCDA teams);
- United Nations Disaster Assessment and Co-ordination (UNDAC) team.

1.3. *"Possessions of disaster relief personnel"* means:

All equipment, provisions, supplies, personal effects and other goods brought for and/or by disaster relief personnel in order to perform their duties and to otherwise support them in living and working in the country of the disaster throughout the duration of their mission.

1.4. *"Relief consignment"* means:

Goods, such as vehicles and other means of transport, foodstuffs, medicaments, clothing, blankets, tents, prefabricated houses, water purifying and water storage items, or other goods of prime necessity, forwarded as aid to those affected by disaster.

1.5. *"United Nations relief operation"* means:

Assistance and/or intervention, by the United Nations, a United Nations Agency or on its behalf, during or after disaster to meet the life preservation and basic subsistence needs. It can be of emergency or protracted duration.

1.6. *"Emergency"* means:

A sudden and usually unforeseen event that calls for immediate measures to minimize its adverse consequences.

ARTICLE 2.

Organizations involved in United Nations relief operations

Included are:

- United Nations (UN)
- UN Agencies
- Governmental (GOV), intergovernmental (IGO) and non-governmental (NGO) organizations certified by the UN as *bona fide* participants within the framework of a United Nations relief operation
- Transport carriers contracted by the UN, a UN agency or a UN certified GOV/IGO/NGO for transportation of relief consignment(s) and/or possessions of disaster relief personnel.

ARTICLE 3.

Facilitation measures for United Nations relief operations

The State/Government of _____ agrees to:

3.1. With respect to exports:

3.1.1. Waive any economic export prohibitions or restrictions, and any export duties or taxes, in respect of goods contained in relief consignments destined for countries having suffered disasters and in possessions of disaster relief personnel;

3.1.2. Accept at exportation, as a general rule, the written summary declarations made out by the UN, or its agencies, or organizations involved in UN relief operations as detailed in Article 2 of this Agreement, of relief consignments as evidence of the contents and of the intended use of such consignments;

3.1.3. Take such steps as may be necessary in order that the Customs authorities where the exports are made are in a position to:

- a) Expeditiously examine, only when necessary for security or narcotics/contraband control purposes and where appropriate by applying sampling or selective techniques against the summary declaration, the contents of the relief consignments and possessions of disaster relief personnel, and certify the results of this examination on that declaration;
- b) Where possible, place such consignments under Customs seals where such action is likely to avoid delays in the forwarding of the goods at later stages in their journey;
- c) Permit such consignments to be presented for export clearance at any approved Customs office and, in stockpile States, in advance of the need for actual export; and

d) Permit such consignments to be placed in a Customs warehouse for subsequent export, for providing humanitarian assistance;

3.2. With respect to transshipment or transit:

3.2.1. Allow operators, under supervision of the public authorities concerned, to disassemble transshipment cargo including shipments in containers and on pallets, so that they may sort and reassemble shipments for onward carriage without examination, except for reasons of security or in special circumstances, and subject only to simple documentation where required;

3.2.2. Facilitate as far as possible the carriage of relief consignments and possessions effects of disaster relief personnel in Customs transit, with due regard to any action taken under paragraph 3.1.3 above;

3.3. With respect to imports:

3.3.1. Allow admission free of import duties and taxes or charges having an equivalent effect and free of economic import prohibitions or restrictions in respect of:

- a) All relief consignments imported by the UN, or its agencies, or organizations involved in UN disaster relief operations as detailed in Article 2 of this agreement, for distribution free of charge by them or under their control to victims of disaster in their territory, in particular where such consignments consist of foodstuffs, medicaments, clothing, blankets, tents, prefabricated houses or other goods of prime necessity;
- b) Possessions of disaster relief personnel delivering humanitarian assistance;

3.3.2. Facilitate the temporary admission, with conditional relief from import duties and taxes of any equipment required by the UN or its agencies or organizations involved in disaster relief detailed in Article 2 of this Agreement, and used by them or under their control in action undertaken to alleviate the effects of a disaster; and whenever possible not to require security but accept an undertaking given by them to re-export such equipment;

This equipment covers *inter alia*:

- transmission and communication equipment;
- water purifying and water storage items;
- all equipment, machinery, tools and electronic devices required by technical specialists, such as doctors, engineers, communications technicians, logisticians, community workers, etc. to perform their duties;
- equipment not directly involved in relief operations but used to fight and eliminate the consequences of natural and similar disasters, e.g. for elimination of pollution of all types, decontamination of buildings and territories, inspection of industrial structures, etc.;

- administrative support items such as office equipment, e.g. computers, photocopiers and typewriters, expendable supplies, staff security items and administrative manuals and documents;
- tents, prefabricated and mobile staff accommodation units and associated materials including cooking and dining equipment and supplies, sanitation requirements and compound safety/security items;
- possessions of disaster relief personnel;
- means of transport and spare parts and equipment for their repair;
- animals for rescue operations, e.g. specially trained dogs.

3.3.3. Authorize and make suitable arrangements for the relief consignments, including those in containers and on pallets and the possessions of disaster relief personnel to be examined and/or released outside the hours and places normally prescribed, and to waive any charges for Customs attendance;

3.3.4. Allow operators and importers to submit manifest and entry details to Customs prior to arrival of the relief consignments in order to facilitate immediate release;

3.3.5. Accomplish physical examination of cargo, when required, on a sampling or selective basis, and carry out such examination as rapidly as possible;

3.3.6. Make arrangements whereby the maximum number of relief consignments can be released promptly after arrival upon presentation of a provisional entry document or a legally acceptable electronic equivalent, subject to complete fulfillment of Customs and other requirements within a specified time limit.

ARTICLE 4.

Application of facilitation measures

The measures in Article 3 shall be applied:

- to relief consignments and possessions of disaster relief personnel sent to disaster-affected areas by any of the organizations referred to in Article 2 of this Agreement;
- by Customs at the points of entry and/or exit, whether or not they have been informed by their superior administration of a particular relief consignment and/or possessions of disaster relief personnel.

ARTICLE 5.
Ad-hoc adjustments

The United Nations and the State/Government of _____ may conclude ad-hoc adjustments to the present Agreement.

ARTICLE 6.
Non-waiver of immunity

Nothing contained in this agreement shall be deemed a waiver, express or implied, of any immunity from suit or legal process, or of any privilege, exemption or other immunity enjoyed or which may be enjoyed by the United Nations and its personnel by virtue of the Convention on the Privileges and Immunities of the United Nations adopted by the General Assembly on 13 February 1946.

ARTICLE 7.
Entry into force, amendment and termination

7.1 This Agreement shall enter into force (within ____ days) upon its signature by both parties.

7.2 This Agreement may be amended only by a written instrument signed by both parties.

7.3 This Agreement may be terminated by either party on 90 days written notice to the other arty.

Approved by the Permanent Technical Committee of the World Customs Organization at its
157-158th sessions in April 1996

January 8, 2007

Model UN Certificate

Issuing Organization
(Office for the Coordination of Humanitarian Affairs or a designated UN Agency)

TO WHOM IT MAY CONCERN

This is to certify that
(Name of an organization, individual, group of individuals, team, constituted unit, etc.)

.....
is a *bona fide* participant of the United Nations relief operation undertaken at the request of the Government of

.....
(Name of requesting country)

in order to provide international assistance to meet the life preservation and basic subsistence needs resulting from

.....
(name of the natural disaster, complex emergency, environmental emergency, etc.)

.....
and as such is entitled to the application of the Customs facilitation measures which are applied to the relief consignment(s) and/or possessions of disaster relief personnel involved in United Nations relief operations by Customs authorities at the points of entry and/or exit.

All those whom it may concern are requested to extend to the bearer the facilities, privileges and immunities, which pertain to and facilitate by all suitable means the execution of the mission on which he is engaged.

The holder of this certification and his representative(s) will be held responsible for compliance with the laws and regulations of the country/Customs territory of departure and the countries/Customs territories of temporary admission.

This certification is valid until/...../.....
(Year) (Month) (Day)

Done in On.....
(Place) (Year / Month / Day)

Signature of authorized Official and stamp of the Issuing Organization

Appendix F: Guidelines for Emergency Response

This appendix identifies supporting and affected nation's guidelines for response in emergency situations. These guidelines were agreed to by the Black Sea Initiative (BSI) Standards and Procedures Working Group (SPWG) and are based on emergency response criteria developed and documented in the Civil Military Emergency Planning (CMEP) South East Europe (SEE) Council's Standard Operating Procedures (SOP). This appendix also contains a table documenting bilateral between BSI countries for disaster assistance.

1. Response Guidelines

- a. Supporting nation to bear the cost of deployment of supporting elements
- b. The providing nation is responsible for evacuation of supporting element member in case of injury or death
- c. The providing nation is responsible for taking action for criminal or malicious actions of supporting members

2. Deployment Guidelines for Supporting Elements

- a. Will place a minimal burden upon the affected nation
- b. Will be self-sufficient for 10 days of operation for fuel, food, water, and shelter
- c. Will operate under an established internal management structure
- d. Will deploy with sufficient internal and external communication to direct and sustain their operations
- e. Will expect to be deployed a minimum of 14 days
- e. Will arrive with appropriate inoculations and immunization for operating in the affected nation
- f. Will deploy with appropriate documentation for identification (e.g., driving license, ID card, or Passport)

3. Mission Guidelines for Supporting Elements

- a. Will be qualified to perform the missions they have been requested to perform in support of the affected nation
- b. Will be managed by national authorities and provide liaison personnel to affected nation authorities
- c. Will be staffed to conduct 24 hours per day operations 7 days per week
- d. Will be capable of performing multiple and diverse functions
- g. Will maintain 24-hour communications connectivity with its national authorities and forward deployed elements.

Bilateral Agreements

Bilateral Agreements between BSI Countries

	Bulgaria	Georgia	Moldova	Romania	Russia	Turkey	Ukraine
Bulgaria	-----			Civil Protection	Disaster Prevention and Relief		
Georgia		-----			Disaster Prevention and Relief		
Moldova			-----	Civil Protection	Disaster Prevention and Relief		
Romania	Civil Protection		Civil Protection	-----			Civil Protection
Russian Federation	Disaster Prevention and Relief	Disaster Prevention and Relief	Disaster Prevention and Relief	Disaster Prevention and Relief	-----		
Turkey						-----	
Ukraine				Civil Protection			-----

Source: NATO/EADRCC <http://www.nato.int/eadrcc/new-treaties/eadrcc/treaties/home.htm>

“Civil Protection” represents an agreement on peace-time cooperation in the area of civil protection.

“Disaster Prevention and Relief” represents an agreement on cooperation in civil defense, the prevention of industrial accidents, natural disasters, and their relief.

Appendix G: Public Information Planning Guidance

This section provides guidance on planning public information programs for response to an emergency situation such as a Chemical Incident. National and Local Authorities, as well as, responders must gain the confidence of the population and assure them that measures being taken by authorities will contain and resolve the situation. Public Information can also assist to inform and instruct the population regarding appropriate measures they can take in an emergency situation. A Public Information Plan should be developed, and activated with the first notification and reports of an incident. Responders should maintain close coordination with their National Focal Point regarding the Public Information Plan.

The following guidelines may facilitate Public Information planning and responding to incidents such as the deliberate release of chemicals to cause terror:

GENERAL: (and Suggested References)

1. Communication guidelines below are identified by the World Health Organization (WHO):

- Trust of the Public
- Provide early announcement regarding emergency situation
- Ensure Transparency of information provided
- Understand the public and their needs
- Have a plan that can be executed

<http://www.who.int/infectious-disease-news/Iddocs/whocds200528/whocds200528en.pdf>

2. While no specific guidelines have been established for chemical release incidents, lessons can be drawn from the checklist for public information planning regarding smallpox preparation and response activities, "Communication Plan and Activities" developed by U.S. Center for Disease Control (CDC) which identifies the need for Public Information Plans to contain detailed information regarding the emergency planning and response capabilities for specific situations. <http://www.bt.cdc.gov/agent/smallpox/response-plan/files/guide-e.pdf>

3. Some key Public Information considerations for responders include:

- To maintain close coordination with the National Focal Point
- To understand the Public Information Plan and be aware of national reporting Guidelines
- To provide accurate and timely information to minimize misinterpretations of government activities and statements, and reduce anxiety and confusion in the public sector.
- To protect victims, family, and close contacts, personal information should be distributed on a need to know basis in emergency situations.

Appendix H: Black Sea Region National Points of Contact

This appendix provides a list of Points of Contacts (POCs) for emergency response communication in the Black Sea littoral region, based on those from the Euro Atlantic Disaster Response Coordination Centre (EADRCC) and the Organisation for the Prohibition of Chemical Weapons (OPCW). This information is provided as information only for Albatross Exercise Participants. During the exercise, players will utilize a set of fictitious email contacts provided to them in order to communicate with exercise N-EOCs. For each nation below, the Black Sea Littoral Nations Emergency Response POCs are listed first, followed by the OPCW national POCs.

UN Office for the Coordination of Humanitarian Support (UN OCHA)

Contact: Office for the Coordination of Humanitarian Affairs
United Nations Secretariat
S-3600
New York NY 10017
USA
Phone: (UN Switchboard) +1 212 963-1234
Fax: +1 212 963-1013

Euro-Atlantic Disaster Response Coordination Centre (EADRCC)

Contact: Euro-Atlantic Disaster Response Coordination Centre
NATO Headquarters
Building V, Office V 119
Boulevard Leopold III
Brussels 1110, Belgium
Phone: +32 2 707 2670
Fax: +32 2 707 2677
E-mail: eadrcc@hq.nato.int
Emergency Contact Officer (24h/24):
Duty Officer EADRCC: +32 475 829 071

Organisation For Prohibition of Chemical Weapons (OPCW)

Contact: Technical Secretariat - Selected contacts
OPCW HEADQUARTERS
Johan de Wittlaan 32
2517 JR - The Hague
The Netherlands
Attn: Assistance and Protection
Phone: +31 70 416 3555
Fax: +31 70 416 3209
emergassistbr@opcw.org

BULGARIA

Contact: IPOC OPS National Emergency Situation Centre

VOICE: +359 2 960 10 385

VOICE: +359 2 862 60 75

FAX: +359 2 862 60 24

EMAIL: sacp@cp.government.bg

Updated: 05/25/2005

OPCW: Member State since 29 April 1997

Contacts: Interdepartmental Commission for Export control and Non-proliferation of Weapons of Mass Destruction, Ministry of Economy and Energy

Address 12 Kniaz Alexander Batenberg Street

Sofia 1000

Tel. +359 2 940 7771

Fax. +359 2 988 0727

Email svassileva@mee.government.bg

Mr Christo Atanasov

Head, Internationally Controlled Trade and Security Department

Tel. +359 2 940 7681 direct

Fax +359 2 988 0727 direct

E-mail h.atanasov@mee.government.bg

Mr Radoslav Deyanov

Minister, NATO and International Security Department

Ministry of Foreign Affairs

Tel. +359 2 948 2420; 873 4323 direct

Fax +359 2 948 2037 direct

E-mail rdeyanov@mfa.government.bg

Mrs Ivelina Bahchevanova

Secretary of the National Authority, Director of Internationally Controlled Trade and Security

Department

E-mail ibahchevanova@mee.government.bg

Mrs Silviya Vassileva

Expert, Internationally Controlled Trade and Security Department

Ministry of Economy and Energy

Tel. +359 2 940 7763 direct

Fax +359 2 940 7912 direct

GEORGIA

Contact: Emergency Situations and Civil Safety /

Pridon Sadunishvili, Head, Emergency Situations and Civil Safety,

Ministry of Internal Affairs, Georgia

VOICE: +995 32 75 53 88

FAX: +995 32 75 21 61

CELLULAR: +995 93 37 24 80

EMAIL: cepgeorgia@posta.ge

Updated: 05/25/2005

OPCW Member State since 29 April 1997

Contact: Ministry of Foreign Affairs

Address 4 Chitadze Str.

Tbilisi 380018

Tel. +995 32 284 603; 284 657

Fax. +995 32 284 678

Mr Alexandr Maisuradze

Director, Security and Euro-Atlantic Integration Department

Mr Vasil Rubashvili

Main Specialist, Security, and Euro-Atlantic Integration Department

MOLDOVA

Contact: IPOC OPS Operational Centre

Work: +373 22 73 85 45

Work: +373 22 54 29 56

Fax: +373 22 73 85 69

Mobile: +373 692 60 052

Business phone: +373 22 73 85 06

EMAIL: md-crc@md.pims.org

Updated: 05/25/2005

OPCW Member State since 29 April 1997

Dual Use Goods Circulation Control Division

Contact: Ministry of Economy and Commerce

Address Piata Marii Adunari Nationale 1

Chisinau MD 2033

Tel. +373 22 237 008; 234 588

Fax. +373 22 234 064

Email lupan@moldova.md

Mr Eugen Gorea

Consultant

Mr Ion Lupan

Head of Division

ROMANIA

Contact: IPOC OPS National Operations Centre /

Marius Dogeanu, Chief General Inspectorate for Emergency Situations

Work: +40 21 242 09 90 /

+40 21 232 95 86

Fax: +40 21 242 09 90

Mobile: +40 788 528 411

EMAIL: ro-cpc@ppc.pims.org / dogeanum@mai.gov.ro

OPCW Member State since 29 April 1997
Contact: The National Agency for Exports Control (ANCEX)
Ministry of Foreign Affairs
Address Str. Polona nr 8, Sector 1
Bucharest 010501
Tel. +40 21 311 2083; 305 7219; 305 7200
Fax. +40 21 311 1265; 305 7224; 354 1587; 305 7237
Email ancex@ancex.ro
Mr Cristian Irinel Munteanu
President, State Secretary
Mr Gheorghe Iordache
Director
Tel. +40 21 305 7200 direct
Mrs Ileana-Dora Stănea
Adviser
Tel. +40 21 305 7208 direct
Mrs Sara Constantinescu
Deputy Director
Tel. +40 21 305 7207 direct
Ms Emilia Floroiu
Expert
Tel. +40 21 305 7215 direct

RUSSIAN FEDERATION

Contact: IPOC OPS Crisis Management Centre of EMERCOM /
Yuri Brazhnikov, Director, Intl Cooperation Department, Ministry for Civil
Defense Emergencies and Elimination of Consequences of Natural Disasters
Russian Speaking Only
Work: +7 095 926 37 38 / +7 095 449 99 24
Fax: +7 095 924 19 46
Mobile: +7 910 459 23 12
EMAIL: emercom@mchs.gov.ru
Updated: 05/25/2005

OPCW Member State since 05 December 1997
Contact: The Federal Agency on Industry
Address Shchepkina Street 42
Moscow 107996
Tel. +7 495 606 56 60; 631 9007; 631 9502; 631 93 16
Fax. +7 495 606 3593; 631 8038; 631 8851; 631 9980; +7 495 206 3593 inspection
notification
Mr Boris Sergeyevich Alyoshin
Director
Tel. +7 495 631 9007 direct

Mr Leonid Petrovich Lyangasov
Section Head
Tel. +7 495 606 9255 direct
Mr Viktor Ivanovich Kholstov
Deputy Director
Ms Elena Borisovna Rodyushkina
Section Head
Tel. +7 095 606 9266 direct

TURKEY

Contact: IPOC OPS
Prime Ministry, Turkey Emergency Management, General Directorate
Work: +90 312 425 18 90
Work: +90 312 425 17 29
Fax: +90 312 425 45 36
Mobile: +90 532 505 8000
EMAIL: emat@basbakanlik.gov.tr
Updated: 05/25/2005

OPCW Member State since 11 June 1997
Contact: Directorate General for International Security Affairs
Ministry of Foreign Affairs
Address Balgat
Ankara
Tel. +90 312 292 1792; 292 1793; 292 1794
Fax. + 90 312 287 3731; + 90 312 287 1886 after working hours
Email arud@mfa.gov.tr
Mr Ibrahim M. Yagli
Acting Head of Department, Arms Control and Disarmament
Ms Özlem Demir
Second Secretary

UKRAINE

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Appendix I: Article X of the Chemical Weapons Convention

The **Chemical Weapons Convention (CWC)** is an international treaty, which bans the development, production, stockpiling, transfer, and use of chemical weapons, and also stipulates their timely destruction. The Convention entered into force in 1997 and mandated the **Organisation for the Prohibition of Chemical Weapons (OPCW)** to eliminate the scourge of chemical weapons forever and to verify the destruction of the declared chemical weapons stockpiles within stipulated deadlines. All BSI Nations have ratified the CWC, which also provides, inter alia, the right to request, subject to the procedures set forth in paragraphs 9, 10, and 11 of Article X of the CWC, and to receive assistance and protection against the use or threat of use of chemical weapons as laid out under paragraph 8 of the same Article. The text of Article X from the CWC is included below.

Article X:

Assistance and Protection against Chemical Weapons

1. For the purposes of this Article, "Assistance" means the coordination and delivery to States Parties of protection against chemical weapons, including, inter alia, the following: detection equipment and alarm systems; protective equipment; decontamination equipment and decontaminants; medical antidotes and treatments; and advice on any of these protective measures.
2. Nothing in this Convention shall be interpreted as impeding the right of any State Party to conduct research into, develop, produce, acquire, transfer or use means of protection against chemical weapons, for purposes not prohibited under this Convention.
3. Each State Party undertakes to facilitate, and shall have the right to participate in, the fullest possible exchange of equipment, material and scientific and technological information concerning means of protection against chemical weapons.
4. For the purposes of increasing the transparency of national programs related to protective purposes, each State Party shall provide annually to the Technical Secretariat information on its program, in accordance with procedures to be considered and approved by the Conference pursuant to Article VIII, paragraph 21 (i).
5. The Technical Secretariat shall establish, not later than 180 days after entry into force of this Convention and maintain, for the use of any requesting State Party, a data bank containing freely available information concerning various means of protection against chemical weapons as well as such information as may be provided by States Parties.
The Technical Secretariat shall also, within the resources available to it, and at the request of a State Party, provide expert advice and assist the State Party in identifying how its programs for the development and improvement of a protective capacity against chemical weapons could be implemented.

6. Nothing in this Convention shall be interpreted as impeding the right of States Parties to request and provide assistance bilaterally and to conclude individual agreements with other States Parties concerning the emergency procurement of assistance.

7. Each State Party undertakes to provide assistance through the Organization and to this end to elect to take one or more of the following measures:

(a) To contribute to the voluntary fund for assistance to be established by the Conference at its first session;

(b) To conclude, if possible not later than 180 days after this Convention enters into force for it, agreements with the Organization concerning the procurement, upon demand, of assistance;

(c) To declare, not later than 180 days after this Convention enters into force for it, the kind of assistance it might provide in response to an appeal by the Organization. If, however, a State Party subsequently is unable to provide the assistance envisaged in its declaration, it is still under the obligation to provide assistance in accordance with this paragraph.

8. Each State Party has the right to request and, subject to the procedures set forth in paragraphs 9, 10 and 11, to receive assistance and protection against the use or threat of use of chemical weapons if it considers that:

(a) Chemical weapons have been used against it;

(b) Riot control agents have been used against it as a method of warfare; or

(c) It is threatened by actions or activities of any State that are prohibited for States Parties by Article I.

9. The request, substantiated by relevant information, shall be submitted to the Director-General, who shall transmit it immediately to the Executive Council and to all States Parties. The Director-General shall immediately forward the request to States Parties which have volunteered, in accordance with paragraphs 7 (b) and (c), to dispatch emergency assistance in case of use of chemical weapons or use of riot control agents as a method of warfare, or humanitarian assistance in case of serious threat of use of chemical weapons or serious threat of use of riot control agents as a method of warfare to the State Party concerned not later than 12 hours after receipt of the request. The Director-General shall initiate, not later than 24 hours after receipt of the request, an investigation in order to provide foundation for further action. He shall complete the investigation within 72 hours and forward a report to the Executive Council. If additional time is required for completion of the investigation, an interim report shall be submitted within the same time frame. The additional time required for investigation shall not exceed 72 hours. It may, however, be further extended by similar periods. Reports at the end of each additional period shall be submitted to the Executive Council. The investigation shall, as appropriate and in conformity with the request and the information accompanying the request, establish relevant facts related to the request as well as the type and scope of supplementary assistance and protection needed.

10. The Executive Council shall meet not later than 24 hours after receiving an investigation report to consider the situation and shall take a decision by simple majority

within the following 24 hours on whether to instruct the Technical Secretariat to provide supplementary assistance. The Technical Secretariat shall immediately transmit to all States Parties and relevant international organizations the investigation report and the decision taken by the Executive Council. When so decided by the Executive Council, the Director-General shall provide assistance immediately. For this purpose, the Director-General may cooperate with the requesting State Party, other States Parties, and relevant international organizations. The States Parties shall make the fullest possible efforts to provide assistance.

11. If the information available from the ongoing investigation or other reliable sources would give sufficient proof that there are victims of use of chemical weapons and immediate action is indispensable, the Director-General shall notify all States Parties and shall take emergency measures of assistance, using the resources the Conference has placed at his disposal for such contingencies. The Director-General shall keep the Executive Council informed of actions undertaken pursuant to this paragraph.

Appendix J: Guide to Use of GIS in Disaster Response - Geo-Spatial Information and Geographic Information Systems (GIS)

This appendix provides Albatross exercise participants with guidance on the importance of the utilization of geo-spatial information and Geographic Information Systems (GIS) for developing and accessing mapping information to support decision-making in response to emergency situations.

During an emergency response situation, GIS can provide valuable information to all facets of the activity. From providing a graphical representation of tabular data allowing managers to quickly ascertain status and more efficiently direct response and recovery resources (fig. 1), to providing teams on the ground with detailed road networks within their assigned work zones to aid navigation (fig. 2), GIS can help. The figures below illustrate an example of this use during the US response to Hurricane Rita in 2005.

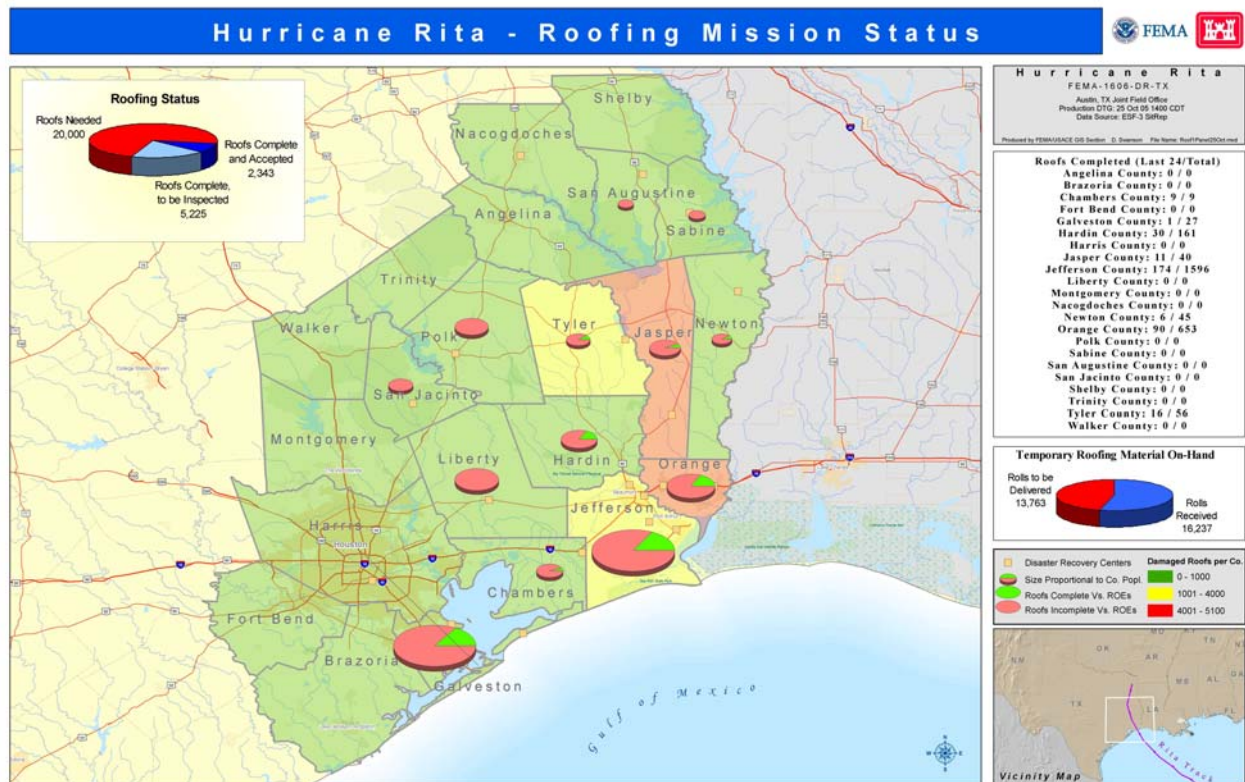


Figure 1

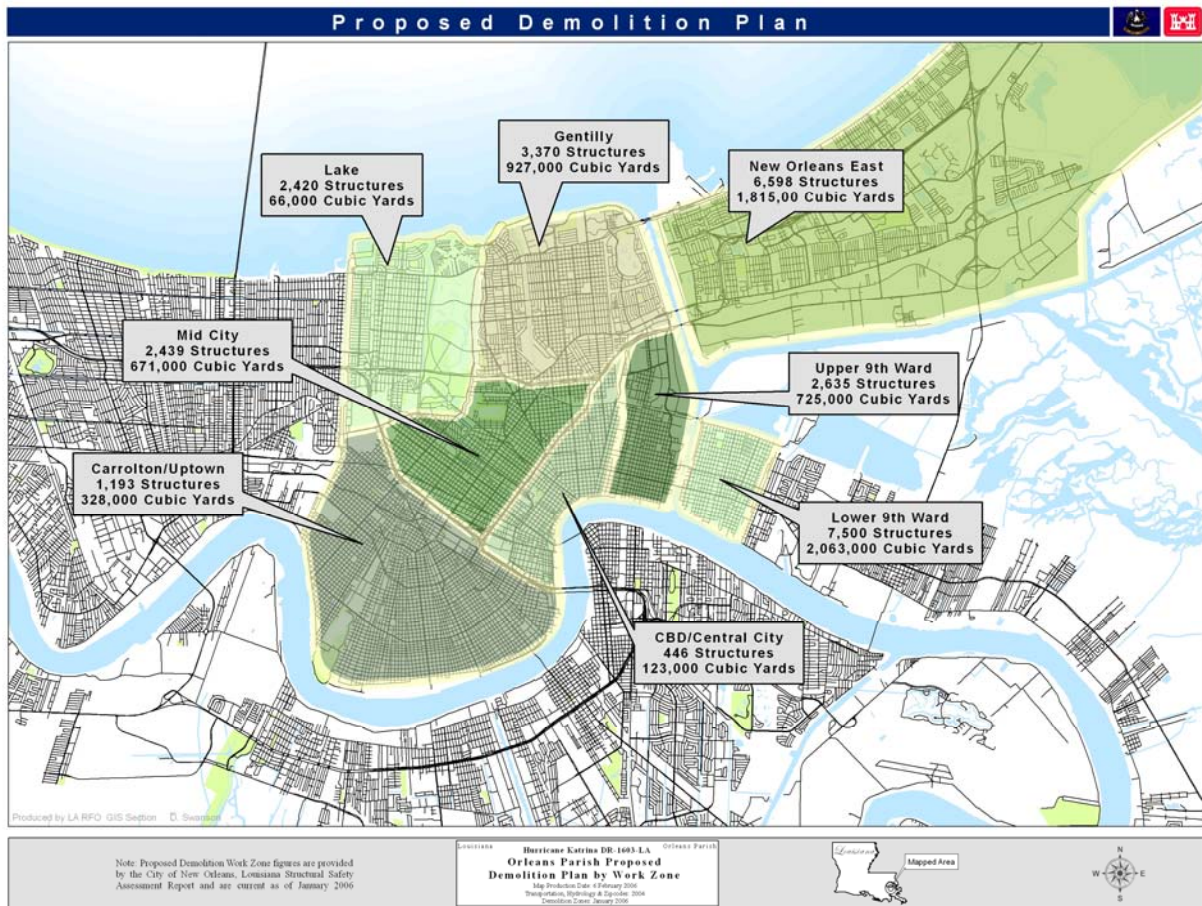


Figure 2

The process for obtaining GIS products is to simply make a request to a GIS office or GIS specialists. In some cases a GIS/Map Request Form may be used by such an office or GIS specialist to clearly identify what the requestor wants and to help manage and track workloads. The form typically asks for contact information of the requestor (Name, Phone, Office, etc.), various map layers available (Roads, Rivers, Boundaries, etc.), desired product output (small page, large poster, slide) and a space to provide comments or special instructions. In some cases a requestor may not know exactly what is needed or how best to convey their information in a map/graphical format. In this case it is best to speak directly to any GIS Specialist to work together on fulfilling the map need.

For the purposes of this exercise, each National Emergency Operations Center (NEOC) should have a GIS specialist who can assist the Civil Protection Expert by providing GIS products to assist response or decision-making during the TTX. This expert can provide this assistance through the production of maps based upon geospatial data either available in their own databases or gathered through requests to GIS experts at other NEOCs. GIS mentors who are part of the exercise control group are available to assist the GIS experts when needed.

Finally, integration of the Black Sea Initiative Viewer, modeling software, and GIS can support plotting projected path of toxic clouds and assist civil protection decision makers in determining areas that might require their attention to mitigate effects of the toxic chemical situation.

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14. ABSTRACT This After Action Report evaluates the execution, planning and development of the Civil-Military Emergency Preparedness (CMEP) Black Sea Initiative (BSI) Table Top Exercise Albatross 2007, held in Batumi, Georgia 12-15 February 2007. The Institute for Defense Analyses provided support to the planning, development, facilitation and execution of the Albatross exercise, which was the second in the BSI series. The exercise, which featured a civilian focused chemical consequence management scenario (with three major events oil spill, toxic industrial chemical explosion and chemical weapons release) was the culmination of a year's effort developing and preparing for the exercise with the assistance of the Georgian hosts and the participation of representatives from six Black Sea littoral nations (Romania, Bulgaria, Georgia, Moldova, Turkey, Ukraine) who were the co-developers and main training audience for this exercise. This AAR is to inform the planning of future Table Top Exercises in the CMEP BSI series under the same task for the Chief, Civil-Military Emergency Preparedness under the lead of the U.S. Army Corps of Engineers.					
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